

# INFO

The USEFUL Guide to Commodore Computing!

LASER-PRINTED!!



## IN THIS ISSUE:

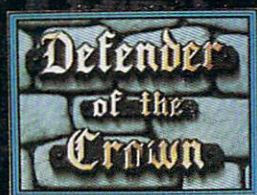
- \* 18 NEW AMIGA GAMES REVIEWED!
- \* 24 NEW 64/128 GAMES REVIEWED!
- \* MIDI FOR THE C64
- \* SPREADSHEETS
- \* MORE HARD DRIVES FOR THE 64

---PLUS---

- \* FREE COMPUTER BOARD GAME!  
(board & equipment inside)

# FUN FUN FUN...

and games



INFO Exclusive: "HOW WE CREATED THE AMIGA COMPUTER."  
- R.J. Mical, author of INTUITION, tells the REAL story for the first time!

# We just did something only the best can do! We made our award winning\* software for the Commodore™ 128 and 64 computers even better!

## Introducing ...

**Pocket Writer 2**  
word processor  
**Pocket Planner 2**  
spreadsheet  
**Pocket Filer 2**  
database

## New Features

Our new Pocket 2 series offers features usually found only in much more sophisticated applications software. Features that include: compatibility with the new GEOS operating system†, ability to work with the Commodore RAM expander to allow a RAM disk, mouse support with pull down menus, 1571 burst mode for faster file loading, increased support for two single disk drives, automatic configuration for screen color, format and printer selection†.

Sophisticated software, yes, and still easy to use. You can be up and running in under 30 minutes even if you haven't operated a computer before.

## 2 Programs in 1

Now, when you upgrade your Commodore™ 64 to a 128, Pocket software helps make it a breeze. The new Pocket 2 software has both 128 and 64 applications on the same disk. So when you buy one you are actually buying two software packages. The cost only \$59.95 (U.S.).

## 6 Programs in 1

The 180% Solution saves you money! You can buy all three Pocket 2 applications, Pocket Writer 2, Pocket Planner 2 and Pocket Filer 2 in one convenient **Superpak** for the low price of only \$99.95 (U.S.). A super way to discover all the integrated features of Pocket 2 software and save almost eighty dollars.

As a companion to Pocket Writer 2, a **Dictionary Disk** containing 32,000 words (expandable to 40,000) is available. The cost \$14.95 (U.S.).

For those of you who have already discovered the many benefits of owning Pocket software; we offer all registered owners an upgrade to Pocket 2 software for only \$19.95 (U.S.) plus 3.00 (U.S.) shipping and handling! Available only by writing to Digital Solutions Inc.

### **Pocket Writer 2 Word Processor** In addition to the new features above...

Spelling Checker incorporated in program (requires a dictionary disk)  
Spelling Checker now runs over 300% faster than in original Pocket software  
Word wrap is now fully automatic†  
Ability to move columns  
Go To page number for finding information in long texts†  
Fully automatic upper and lower case type conversion†  
Enhanced Delete process for word, line or paragraph  
Word Count feature for essays and assignments†  
Enhanced split memory mail merge option

### **Pocket Planner 2 Spreadsheet** In addition to the new features above...

Individual column width selection now available†  
Multiple files in memory with cut and paste capability

Able to print mathematical formulae as well as results of calculations†  
Global formatting option  
Enhanced row/column insert delete†  
Logarithmic and XY graphing capability  
Increased file compatibility with other spreadsheets†  
Number of rows increased from 99 to 250†

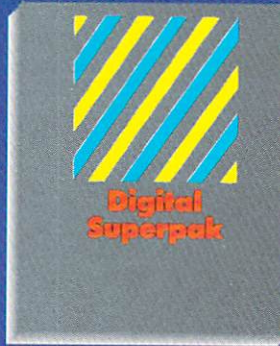
### **Pocket Filer 2 Database** In addition to the new features above...

Dynamic calculations during data entry  
Intelligent re entry to enter/edit mode  
Easier file conversion from other software†  
Automatic index updating for constantly sorted file†  
Enhanced mathematical language including loops and labels†  
High speed sort using dynamic buffering†  
Automatic entry of repetitive data†

\*Commodore's Microcomputers Magazine, independent reviewers, rated the original Pocket Writer 128/64 and Pocket Planner 128/64 software the "Annual Best of 1986" in the productivity category.

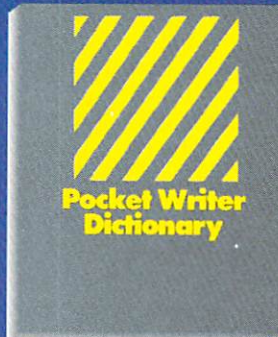
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†Features available for Commodore 64™.  
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Pocket Writer 2, Pocket Planner 2 and Pocket Filer 2 together  
Convenient; get all three integrated applications at once  
128/64 software on same disks  
Economical; \$179.85 (U.S.) worth of software for only  
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Makes Spelling Checker faster and simpler to use  
More convenient than developing personal disk  
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That's Simple to Use**

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Planner 2**  
Spreadsheet



**Pocket  
Filer 2**  
Database

**The Best  
Just Got Better**

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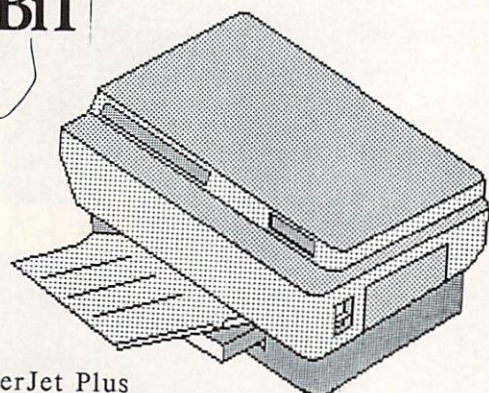
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QUICKSILVER 128™



HP LaserJet Plus

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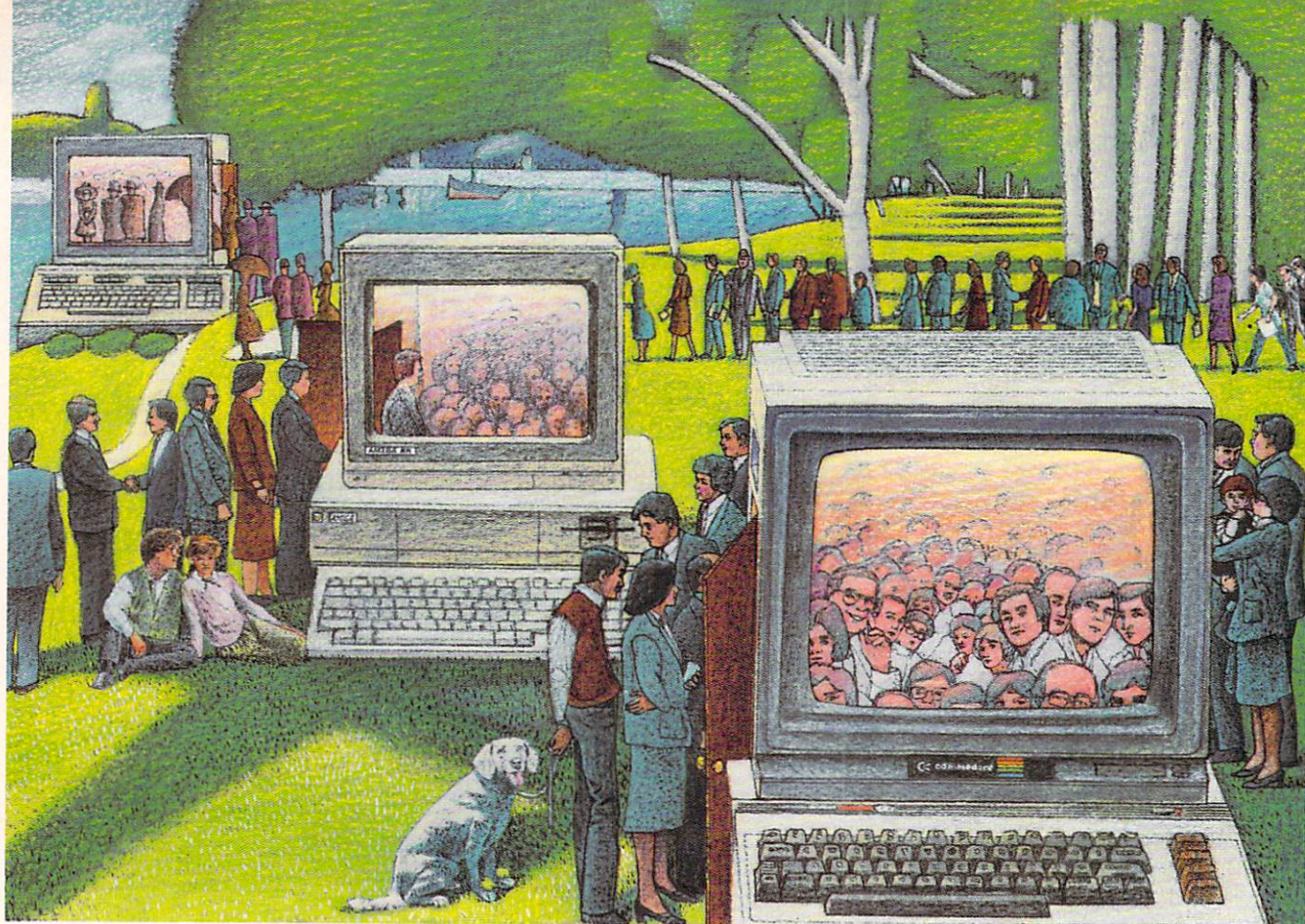
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### ABOUT THE COVER

The castle courtyard scene on the cover is just one of a multitude of animated medieval scenes from the first of a new genre of computer games, the *interactive movie*. **Defender of the Crown**, a Cinemaware title from Mindscape, lets you participate in jousts, raid the castles of rivals, visit Robin Hood, and rescue fair damsels in distress, all to the accompaniment of excellent sound and what are arguably the best graphics ever produced on a personal computer. Judge for yourself from the cover photo. The Cinemaware series invokes the Mical gaming system, named for our newest regular contributor, RJ Mical, whose main claim to fame is authorship of the Intuition operating system that lies at the heart of every Amiga. In his first column for INFO, RJ tells the real story behind the creation of everyone's favorite personal computer.

As the cover proclaims, this is a special games issue, and the Games Galleries have been expanded to *fourteen pages* for this issue. If that's not enough games to hold you, then turn to the centerfold and check out **INFO Mania**, INFO's first free computer game! (We finally figured out a way to *totally* eliminate the typing.) Lest you think this issue is *all* fun and games, don't miss Ted's look at spreadsheets, Don's C64/C128 hard disk roundup, and Peggy's C64/C128 MIDI and Amiga music features. Thanks for reading!



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The Commodore **Arts and Games Forum** is for all Commodore 8-bit computers, concentrating on music, graphics and games.

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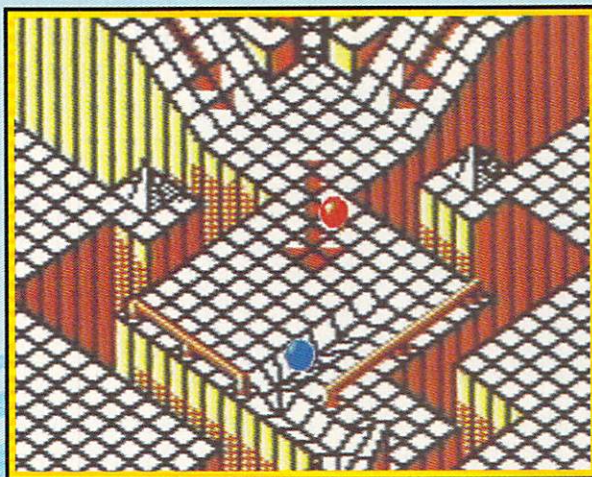
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Go Ahead, Lose Your  
Marbles...

# MARBLE MADNESS

is Here!!!

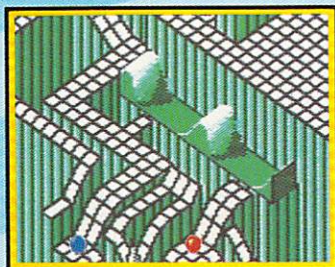
The game that  
drove you crazy at  
the arcades now  
comes home. Same  
exciting gameplay,  
same blow-away  
graphics, sounds  
and music. We've  
even added an  
incredible all-new  
secret level.



A unique game  
experience that's  
crazy fun for every-  
one. Two players  
race to the goal  
line, or one player  
races against the  
clock. It's sports  
competition, kine-  
tics and strategy.

## Ultimate Competition for 1 or 2 players.

The object is simple. Race your marble to the goal line, and don't let anything get in your way. It sounds easy, but it just might drive you nuts.



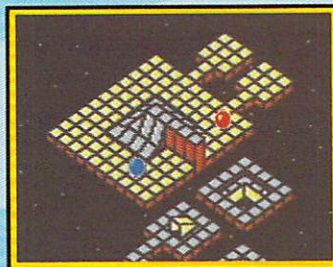
## Spectacular Animation

Fantastic 3-D terrains are the  
raceways. Zany (but dangerous)  
enemies await your every turn.  
Avoid the deadly steelies and  
the pounding hammers. Watch  
out for the hungry marble  
munchers. Even surf a  
mechanical wave!



## Secret Level

If you can find it, just wait till  
you try to get through it!



## Incredible Madness

Marble Madness, the ultimate  
In exciting non-stop action.  
Each level has its own "person-  
ality" and creatures to contend  
with, as well as its own orig-  
inal music score. It's not easy  
being a marble - make it to  
the Ultimate Level and you'll  
know why.



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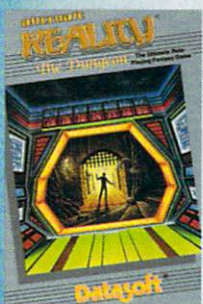


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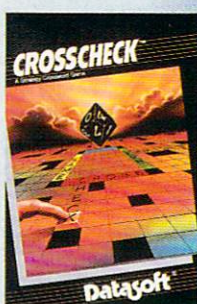
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(Not Bad for a 37-Ton Tank.)

# 0 to 100 MPH In 4 Seconds

*In Antarctica, no one can hear you scream...*

*You're caught in a blizzard with your air supply running low. Snowblind, you hear a scream overhead and it isn't the wind. An alien fighter plane has spotted you and he's got you locked-on. If he's got buddies, you could end up Spam®-in-a-can. Uh-oh, your radar picks up incoming fighters, tanks, missiles and rockets. Get ready for the fight of your life...*



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**CODE NAME:** Arcticfox

**MISSION:** Infiltrate alien stronghold. Search out and destroy alien main fortress. Terminate alien troops with extreme prejudice.

**PRIMARY ASSAULT VEHICLE:** Arcticfox, 37-ton advanced all-terrain vehicle.

**ARMAMENT:** 150mm cannon  
2 mine dispensers  
Tunnel series missile-launcher  
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**MAX SPEED:** 100 mph

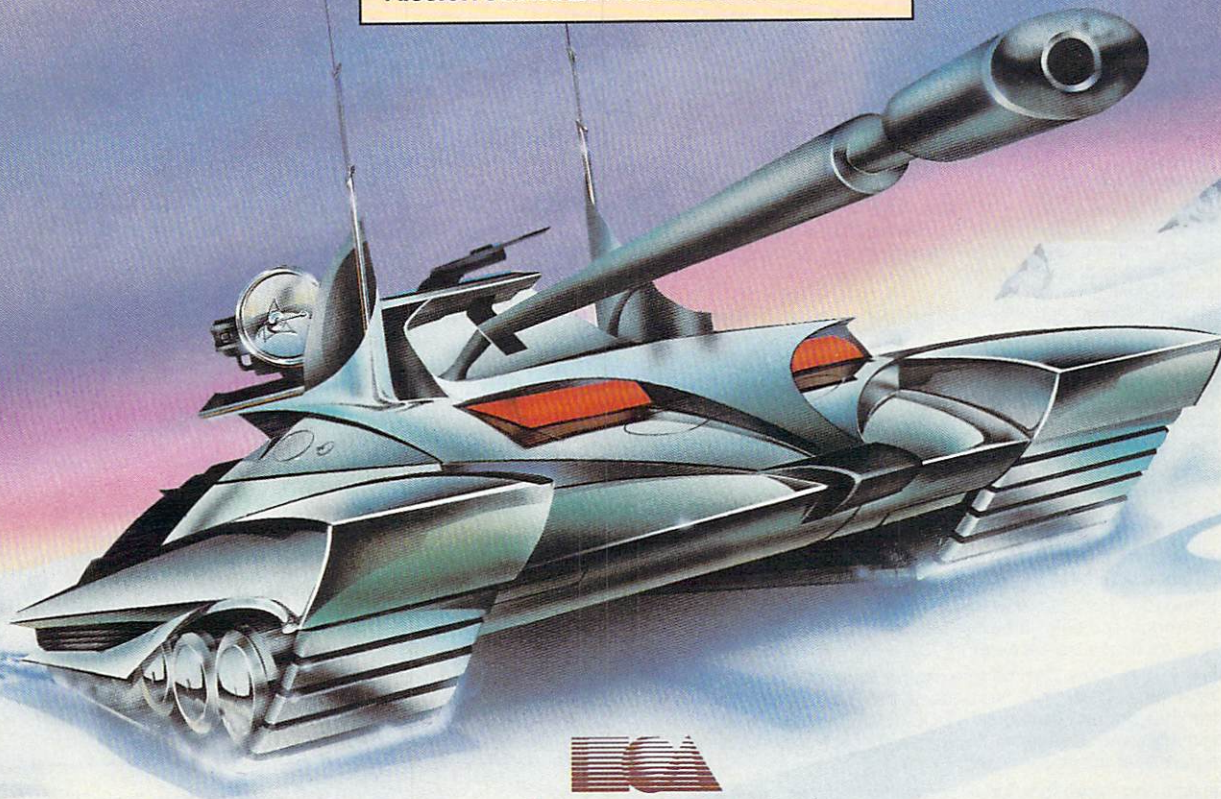
**CREW:** 1

**MISSION SUCCESS PROBABILITY:** Slim

**MISSION SURVIVAL PROBABILITY:** Worse



*The Main Fortress. If you're good enough to find it, are you bad enough to destroy it?*



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- 160 functions at your fingertips

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- 42 prewired command keys - 10 to wire your way!
- Line/screen editors • SEARCH/ GOTO commands in buffer
- CompuServe "B" and XMODEM CRC/Checksum file transfer protocol
- Runs in 80 columns only

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## The Kernal

Hot out of the programmer's hands...the Kernal available now for Commodore 64s!

Commodore users can now use the SUPERDOS fastloader, the DOS wedge and enjoy a built-in freeze/exit function for the first time. Experience the ultimate!

The Kernal is 100% Commodore compatible with easy access! It includes a SUPERDOS fastloader in mode files that's 15 times faster than normal. The Kernal's DOS wedge disables wedge commands and drive rattle. Its un-new function restores basic program after a new command.

The amazing freeze function allows exit to basic and then a return. Imagine a hardware reset that doesn't destroy data. The Kernal even loads ML or binary programs from the disk. All of this and more happens when you use the Kernal!

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version 2.0 by Marty Franz & Joe Peter

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**\$29.95**

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**PRISM**  
SOFTWARE

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## the EDITORS' PAGE



### SYSOP COMPENSATION

There are a lot of misconceptions about how the networks work.

In the November **Compute!** Arlan Levitan made a comment in his *Telecomputing Today* column concerning "...a lucrative sysop position on CompuServe..." Though he withdrew the comment in his December column, I think it accurately reflects a general misconception about the way the networks operate. (And he's a telecommunications expert!)

Most nets compensate their system operators, or sysops, with free connect time. That's it. Some reportedly also offer a percentage of connect time charges from those who access the area the sysop maintains, though I've never spoken to a sysop online who's had that kind of a deal. But in any event, the compensation is *never* equivalent to the amount of work that goes into maintaining an area on a major network.

The sysop's duties include policing the messages users upload for accuracy and illegal or immoral content, maintaining the download databases, scheduling online conferences and conference guests, maintaining and continually updating the message boards, posting bulletins about activities and system changes, spending time online for users to chat with, and maintaining user membership rolls. That takes an incredible amount of time. Needless to say, those who take on the job of system operator do so at great personal cost. Their compensation is minimal compared to their efforts. It is a labor of love.

Is that fair? In a recent late-night conversation with one sysop on a major network, he revealed to me that his online area was the top connect-time moneymaker for that network. His compensation was free connect time. Is it fair for a company which is in business to make money to expect people to maintain their system for them essentially for free? I think not. The time has come for the networks to realize this: *Without the sysops to provide the online information, network users would be stuck staring at a blank screen.* How much online time do you think they could sell for a blank screen?

Perhaps some of the blame can be placed on the naivete of computer users. We love this hobby, and I'm sure that the chance to run a user area on a major network is a big personal thrill. However, the networks do not provide these services out of the goodness of their hearts. They are in business to make money. And if they can get someone to maintain their system for them for free, they make more money. Lots of it. We estimate that just one major network is pulling in at least \$600,000 a month from Commodore users, and The Source made a profit of \$13 million last year. Others did even better.

The time has come for the networks to get honest and start compensating those who do the work of making the networks worth signing onto. If you are a regular user of the nets, we'd encourage you to leave a message online to the management of the system, telling them you'd like to see them start paying their sysops. They're worth it.

### UPLOAD POLICIES

A corollary to the sysop compensation question is the upload policy of the networks. Until recently, users were actually *charged* connect time to upload programs which then became an asset to the network. GENIE changed all that this year by making upload time free, and the other nets followed suit.

But, wait a minute! That just means that it now doesn't cost you anything to upload stuff that then makes money for the network when people pay connect time to download it. They are still not paying anything for what they are getting.

We'd suggest that the nets adopt a method of compensating users for uploaded software. Maybe they could offer an additional free minute of connect time for every minute spent uploading software. Or better yet, how about crediting the contributor with a percentage of the revenues generated by the actual amount of access his uploaded program generates? That would *really* stimulate the development of the online software databases!

## ONLINE COPYRIGHTS

Then, of course, there is the controversy over CompuServe's claim of copyright over every character of data stored on its system. They claim the right to absolutely restrict the distribution of software downloaded from CompuServe, with the argument that it may have been in the public domain before it was uploaded, but as soon as it is in the CIS computer it is copyrighted by CompuServe.

Needless to say, this policy has taken a lot of public domain software authors by surprise, finding out that CompuServe now claims to own the copyright to their work.

CompuServe makes some convoluted claim that this actually "protects" the authors and "promotes" the distribution of the software. It's all doubletalk, of course. The bottom line is that CompuServe wants to make even more money by charging people connect time to download software that CompuServe didn't pay anybody for in the first place. It's the old "How to Charge People For Air" ploy. We don't buy it. Do you?



...INFO's guide to the best from the rest.

Run magazine began exploiting its most popular feature, the *Magic* column, in the October issue by adding another column called *Mega-Magic*. This new column features Magic tips that are too long for a regular listing, though at least one of the two initial listings was actually a few lines shorter than some of the regular Magic items. This issue also featured an interview with (actually more of a series of short quotes from) *Jim Butterfield*. For all you C128 CP/M users, the November Run had a rundown on *public domain CP/M programs*. The December Run had a version of the *Run Script* wordprocessor for the 128 and Run's look at the Spartan. As always, Rev. Jim Strasma's *Commodore Clinic* is worth looking at in all.

*Compute!* is keeping itself of marginal interest by printing at least one *type-in Amiga BASIC* program in each issue. The October issue included *Pyramid Power*, a Q-Bert clone, and *Amiga Math Graphics*. November had a game called *Biker Dave*. In December the offering was *Laser Strike*, a Battleship clone with a space theme that includes speech and stereo sound effects. If you own an Amiga, are interested in type-in BASIC games, and can afford to buy a magazine with only one or two articles that apply to your machine, *Compute!* is your only choice for now.

*Compute!'s Gazette*, on the other hand, has provided its usual mix of saccharine reviews and undistinguished and unreliable type-in programs over the last three months. Anyone who has access to public domain software via a users' group library or network downloading can get *identical* applications with less effort and money involved by either of those methods than by typing in the Gazette's listings.

*Commodore Power/Play & Microcomputing* (which merged into *Commodore Magazine* in the January 1987 issue) continues to grow and develop. Its type-in programs are reliably in BASIC or BASIC-loader format, so that you can learn something from them, and, though their reviews are predictably conservative and uncontroversial, they *definitely* has the inside track on new information! The October/November *Power/Play* has a strange and fascinating article on *using a C64 as a print buffer for the Amiga (!)*, as well as an article excerpting information from Dan Gutman's new book on *Weirdware* (strange applications) for the C64. The October *Microcomputer* is pretty uneventful except for a preview of *Music Construction Set* by Peggy Herrington and Louis Sander's *Tips & Tricks* column. The December issue marks the latest installment of *The Amiga Buyer's Guide*, Commodore's own picks for the *best products of the year*, and Matthew Leed's picks for some of the *best Amiga public domain titles*. And the newly-merged January issue has an amusing and insightful look at 1986: *The Year in Computers*, and the premiere of Robert Baker's *Q-Link Update* column.

*Ahoy!* is showing a disturbing trend towards printing program listings in hex. You can't learn anything from a hex listing. If they are going to insist on publishing machine language programs, I'd like to see them (and all the computer magazines) start publishing the listings in standard assembly language. Maybe it would inspire computerists to move on up

from BASIC. Anyway, Dale Rupert and Morton Kevelson's articles on programming and hardware respectively continue to be the main attraction of *Ahoy!*. Mort digs into R.J. Brachman's *Serial Box* and Xetec's *Printer Enhancer* in the November issue. In the December issue *Ahoy!* got all worked up editorially over the fact that *INFO* once again rated them above the other Commodore magazines (Product RoundUp, issue #12), and consequently said some nice stuff about us. (I wonder how they'll promote it if they ever slip to Number Two?) The January 1987 issue has more good reviews from Morton and a tutorial on the C128's M/L monitor by Rupert.

Dr. Timothy Leary's column debuted in the October issue of *The Guide*. (We've thought about having *Dear Abby* write one for *INFO* along more or less the same lines...) Probably the strangest single issue of any personal computer magazine ever is the November issue of *The Guide*. It's subtitled *SEX & COMPUTERS: A Special Report*. Included are reviews of *Leather Goddesses of Phobos*, *Strip Poker*, and *IntraCourse*, a discussion of *sex online*, and even a look at how computing interferes with one's sex life. It's a fun issue, with plenty of junior high sniggers and giggles along the way.

The November/December *Amiga World* has a look at *color printers* that verifies what we've found out in our own tests: color printers generally still do a pretty lousy job of color printing. If you want to check it out for yourself, they printed some nice examples. This issue also features the *AmigaWorld Software Buyer's Guide*, a listing of 370-odd products for the Amiga. The Jan/Feb '87 issue marks *Amiga World*'s first all-Amiga-generated cover. It features a digitized shot of David Letterman and a magazine logo and titles all done on the Amiga. It's about time! Inside is an article on *Caligari*, an incredible animation system, a *Hardware Buyer's Guide*, and bits on BOBs, menus, and what's new in version 1.2 of the operating system. *Amiga World* is definitely getting meatier.

We've finally gotten in the last couple of issues of *Amazing Computing* and they look pretty good, to say the least. There are lots of fair reviews, tutorials in Forth, C, and BASIC, and articles on BOBs, fonts, menus, and other goodies in issues #7 and #8. It's still being produced on a *Macintosh*, of all things, but a worthwhile publication nonetheless.

Moving to the more generic computer publications, *Byte* continues its excellent

coverage of 16/32-bit computing in the October issue with a feature on *Amiga sound*, as well as their long-awaited *official review of the Amiga 1000*. (They liked it.) Also in that issue is a *preview of the Apple II GS*, about which they were not so enthusiastic. The November issue contains their (positive) *review of the Macintosh Plus*, an interesting look at *computing in the Soviet Union*, and an insightful analysis of *Manx Aztec C* and *Lattice C* for the Amiga by Charlie Heath. December's issue is on graphics, and includes an article on *Mandelbrots on the Amiga*, complete with C listing, and Bruce Webster talks about some Amiga products.

The October *Computer Shopper* contains an article in praise of the *Ziploc sandwich bag* and its usefulness to computerists. The November issue has an article by Sheldon Leeman entitled *The Myth of ST Superiority*, in which he logically and point-by-point counters the allegations of Atari enthusiasts about the ST and the Amiga. It is "must" reading for any Commodore enthusiast. I understand the article grew out of an online argument on GENie between Sheldon and Atari's Neil Harris, and that some notes about that conflict are archived somewhere in the Amiga RT on GENie.

There is one totally non-Commodore related publication that is of interest to Commodore enthusiasts only because of who is responsible for it. As we mentioned last issue, Atari has hired *David Ahl* and *Elizabeth Deal*, the former editors of *Creative Computing* magazine, to produce *Atari Explorer*, their house magazine. We picked up the first issue (Sept/Oct) and it looks good. The editorial content is solid and responsible, and the production is attractive and slick. David Ahl's cool, intelligent, editorial voice seems to be the only rational voice emanating from Atari corporate headquarters. If Atari were to shut up and let Ahl and staff speak for them, Atari would be a much more credible opponent for Commodore. Fortunately, with the Tramiels at Atari's helm that is not likely to happen.

That's it for this time. Don't forget the required reading, too: *The Midnite Software Gazette* for everybody into Commodores, *Computer Language* for programmers, *COMAL Today* for COMAL enthusiasts, *The Transactor* for Commodore techies, *Ami Project* for Amiga programmers, and *Seventeen* if you're a girl in junior high.



# 64/128 GALLERY



64/128



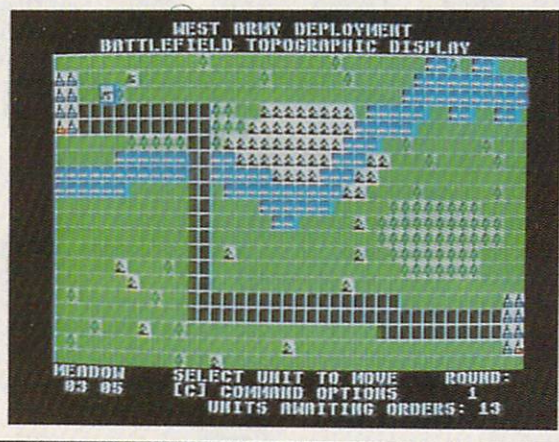
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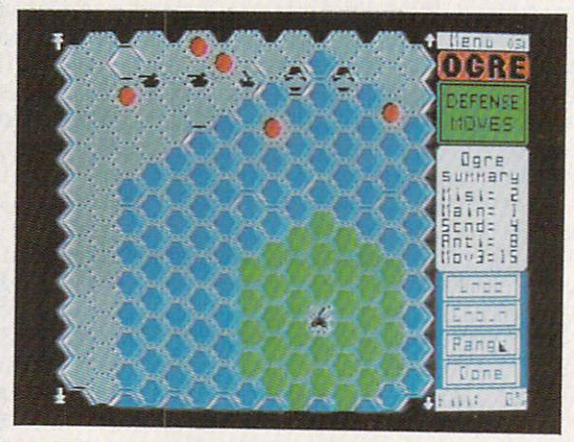
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64/128

ARCTIC FOX (64)  
Electronic Arts  
1820 Gateway Drive  
San Mateo, CA 94404

INFO-rated



*Arctic Fox* is one of the first titles which has been converted from the AMIGA to the 64 (!). Those who take the controls of this lethal 100 MPH super-tank will be treated to some great 3-D graphics, plenty of gadgetry, and all the heat a joystick jockey can handle! You must face and defeat a wide variety of foes on the ground and in the air. Gamers will appreciate the intuitive control interface, which is easy to master, but gives tight control over numerous real-time tasks. I especially like the missile control "flight simulator" -BD

GUNSHIP  
MicroProse  
120 Lakefront Drive  
Hunt Valley, MD 21030

INFO-rated



Almost 2 years since I first heard of *Gunship*, the product is finally shipping. Was it worth the wait? You bet! This is, without qualification, the best combat flight simulation ever released for an 8-bit computer! WOW! solid-modelled terrain graphics, incredible weapons and targeting systems implementation, good sound effects, and convincing physics. Controls are smooth and easy to learn without sacrificing realism. The manual is also a masterpiece, with detailed illustrations and excellent discussions of helicopter theory and tactics. PRIME! -BD

SHADOWFIRE  
Mindscape  
3444 Dundee Road  
Northbrook, IL 60062

INFO-rated



*Shadowfire* is a very stylish import with an emphasis on graphic gadgetry and special effects. Play is entirely icon-controlled with support for light-pen, keyboard, or joysticks. You have 100 minutes of real-time to equip your attack team, beam aboard the captive skyfortress, free the ambassador and locate the secret plans. Character movement via icons gets tiresome after the first 20 minutes, but the displays are great and include scrolling plan views of your team, & status readouts on each member. An unusual and entertaining space-opera offering. -BD

MOEBIUS  
Origin Systems  
340 Harvey Rd.  
Manchester NH 03103

INFO-rated



This ambitious game takes up both sides of two disks. There are many sequences involved in the gameplay, from karate and swordfights to good ol' graphic adventuring. Unfortunately, *Moebius* suffers heavily from Apple conversionitis, with blocky graphics, jerky animation, and a clumsy keyboard user interface. One of the major amusements of *Moebius* is the old wizard himself, who bears a strong resemblance to Steve Wozniak, the creator of the Apple II. If you can get past the look, it has a decent storyline and the action is challenging. -MB

BATTLE COMMAND  
Applied Computer Consultants  
Pentagon Tower Box 36186  
Edina MN 55435

INFO-rated



This game is living proof that you don't have to be a giant company to produce a good game. This is a fun, easy-to-learn battle simulation game with limited graphics and sound. The game is reminiscent of *Battleship* or *Stratego*, but more complex. You wage war with tanks, field artillery, infantry, machine guns, etc. There are even gunboats and spies! The main attraction of *Battle Command*, though, is its two-player-via-modem mode, which lets you play all night via the phonelines, passing nasty messages back and forth. What fun! -MB

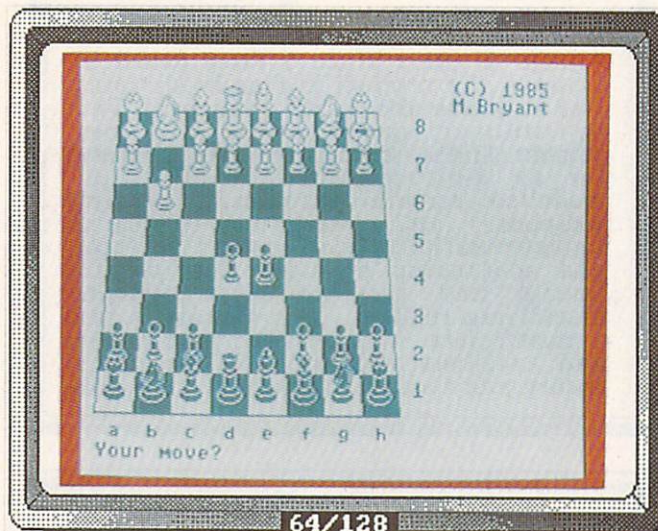
OGRE  
Origin Systems  
340 Harvey Rd.  
Manchester NH 03103

INFO-rated



An *Ogre* is a cybernetic tank with more armor and armament than your standard army division. In this game you defend your command post against one of these juggernauts with standard armor and infantry. You can play a 2-human version, but the real fun is you against the computer. The rules to this one are easier than most simulations, so it might be a good one to pick if you've been wanting to break into battle simulation games. The graphics and sound are limited, but the pull-down menus and joystick interface make play easy. Very nice. -MB

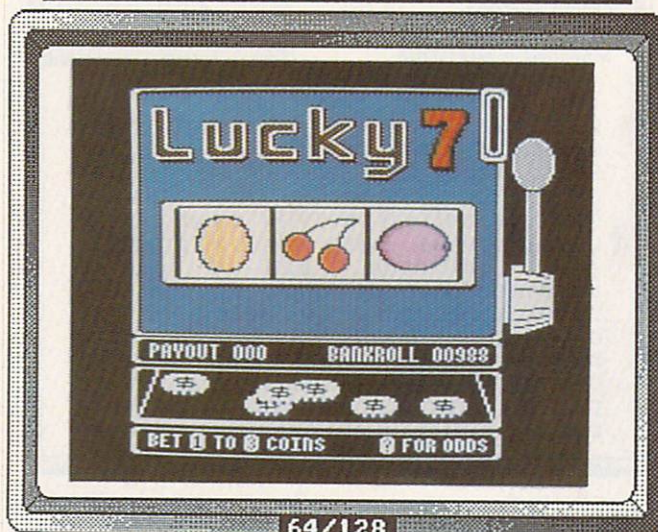
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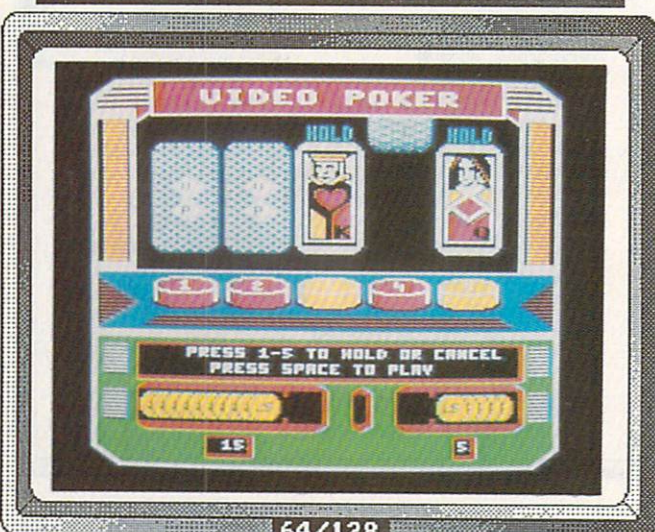
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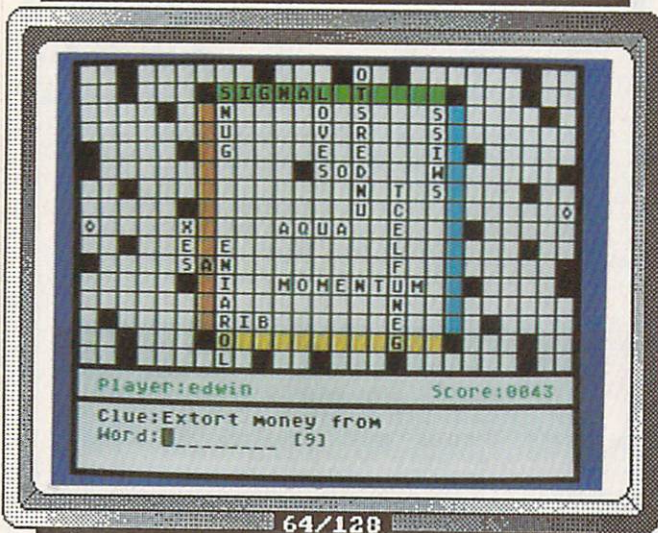
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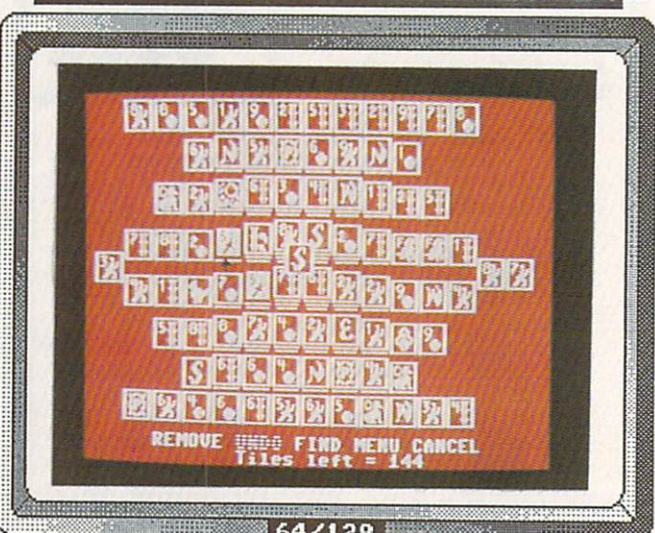
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COLOSSUS CHESS IV  
Firebird  
PO Box 49  
Ramsey, NJ 07446

INFO-rated



Not anywhere near as attractive or feature-laden as *Chessmaster* (pictured right), but a darn sight more playable thanks to the thoughtful inclusion of cursor and joystick options for piece movement. The features are fairly complete: board setup, chess clock, forward and backward stepping, replays, color selection, 2D & 3D displays, mate-solving, & more. The biggest problem with Colossus is that all these features are accessed thru shifted keyboard control sequences which are hard to remember and difficult to find in the manual. Badly in need of a quick-reference card. -BD

CHESSMASTER 2000  
Electronic Arts /  
Software Toolworks  
1820 Gateway Dr.  
San Mateo, CA 94404

INFO-rated



The 8-bit version of the top-rated AMIGA chess game (see page 90) almost makes the translation to the 64. While sporting most of the same extensive playing features (including the invaluable 'teaching mode'), one major design oversight really spoils the whole party for me; the only way to move pieces is by typing in the standard algebraic chess notation (ie: E7E5) on the dang keyboard! (and you can only get the display of coordinates in 2D mode!) What a royal pain in the bit-bucket!!! If you don't mind all the typing, you might like this program- I don't! -BD

VIDEO VEGAS  
Baudville  
1001 Medical Pk. Dr. S.E.  
Grand Rapids, MI 49506

INFO-rated



Four Vegas-style casino games: Blackjack (one player), Keno, Slots, and Draw Poker (simulation of the coin-op poker machines). Each of these simulations is just barely better than what you'd expect to find for free in the public domain. The graphics and sound effects are ho-hum, and there are endless little shortcomings and flaws: only 3 reels, 1 play line, and a max bet of 3 coins on the slot machine; a tedious transfer of funds (one coin at a time) at the blackjack table, and a card-counting tutor which doesn't agree with the supplied manual, to name a few. -BD

VIDEO POKER & JACKPOT  
Mastertronic  
7311 B Grove Rd.  
Frederick, MD 21701

INFO-rated



A lot more fun than the Baudville version. Great graphics on the slot machine simulator, and realistic sound effects on the video poker machine bring the player much closer to the real thing. The slot machine is an elaborate four-reel affair with the 'hold & shuffle' options more prevalent in European casinos (the pay-offs are shown in English pounds!), with lots of different "fruit". The video poker machine is very good, with the convincing sound effects of a typical machine in Vegas, & it's only \$10! -BD

CROSSCHECK  
DataSoft  
19808 Nordhoff Place  
Chatsworth CA 91311

INFO-rated



This crossword game is for one to four players. Your goal is to build a chain of words from the center of the Crosscheck board to your home base in a corner. The gameboard is much larger than the screen can show at one time, so the screen scrolls to show you parts of the board. There are elements of Scrabble and crosswords combined in this game, and it should have some appeal for any word game addict. The graphics are not much to speak of, but it seems to have a fairly extensive word list, and it lets you cheat! -MB

SHANGHAI  
Activision  
2350 Bayshore Frontage Rd.  
Mountain View, CA 94043

INFO-rated

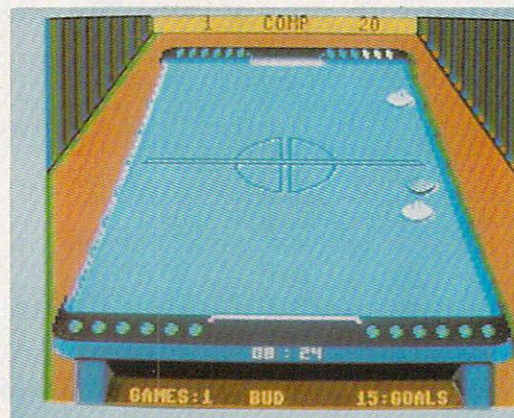


This is a fanatically addictive game. You begin with a pile of 144 tiles arranged in a sort of pyramid called the Dragon. The object of the game is to remove all the tiles by pointing an arrow at matching pairs with your joystick and clicking on them. Strategy is the most important element of the game. Pointer movement with the joystick is rather awkward and slow and the game suffers from hard-to-distinguish graphics and unalterable screen colors, but if you can get past that, you'll find it hard to quit. [Amiga version reviewed on pg. 91] -TM

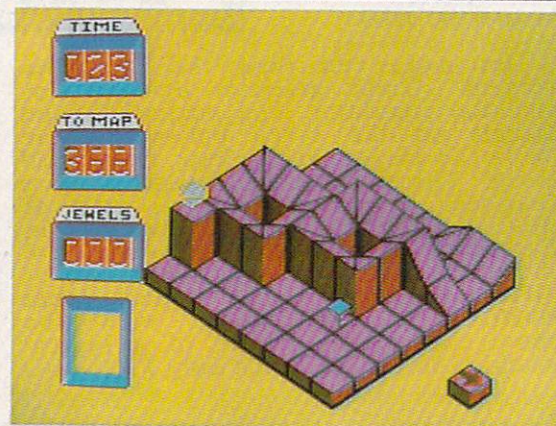
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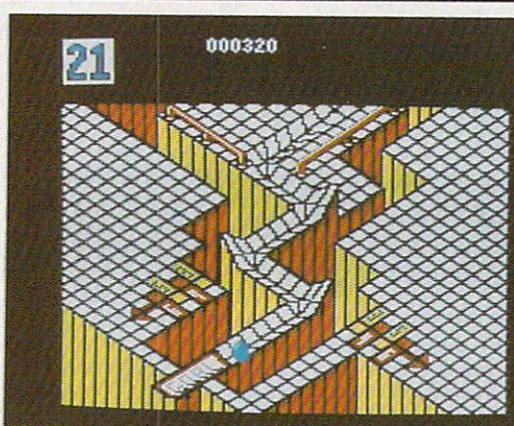
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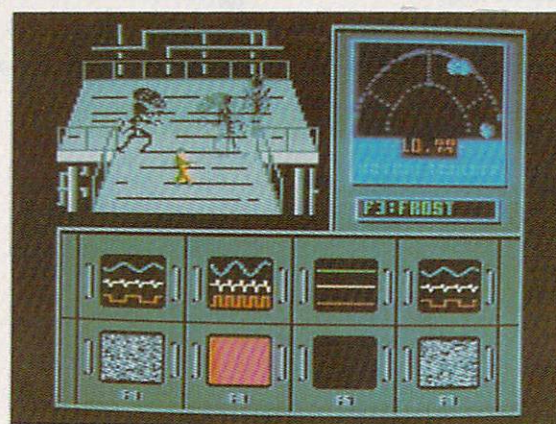
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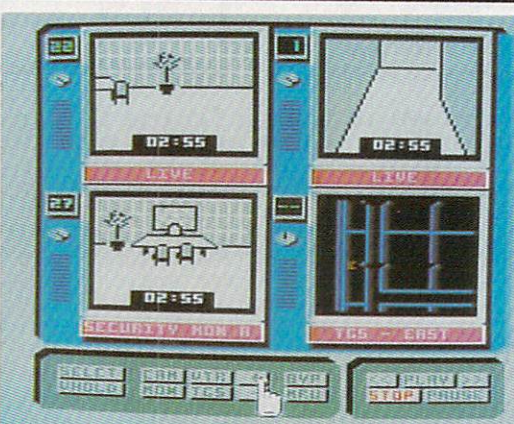
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64/128

**WORLD GAMES**

Epyx  
600 Galveston Drive  
Redwood City, CA 94063

**INFO-rated**

*Summer Games*, *Winter Games*, and now *World Games*. Will we soon see *Galactic Games*? *WG* is my least favorite of the series. Slalom Skiing (pictured left) is the best of the eight new events. The other seven are: Cliff Diving, Sumo wrestling, Bull Riding, Barrel Jumping, Log Rolling, Weight Lifting, and the Caber Toss (when was the last time you paid money to see world-class Log Rolling???) Epyx does such a nice, consistent job of execution, tho, that it's hard to take off too many points even for such boring material. -BD

**INDOOR SPORTS**

Mindscape  
3444 Dundee Road  
Northbrook, IL 60062

**INFO-rated**

Here's an unusual and mixed bag of computer games: Air Hockey, Darts, Bowling, and Ping-Pong! All four of these sports are nicely rendered in the computer medium by the authors, and they are all quite enjoyable (I found the air-hockey to be especially fun and well-done). All the games allow player vs. player or player vs. computer play. The ping-pong game is unique with paddles that float in the air, and move quite articulately in response to your joystick. It's unusual titles like this that keep us fascinated with computer gaming year after year! -BD

**SPINDIZZY**

Activision  
2350 Bayshore Frontage Rd  
Mountain View, CA 94043

**INFO-rated**

This is a hot little number with much of the appeal of *Marble Madness*, but with faster action, more player freedom, greater variety of playfields, and jewels to hunt for. Yep, it's a winner. Guide your spinning 'top' (which glides and spins seductively across the tiles) from screen to screen, and collect all the jewels before time runs out. The maze aspect (how do I get there from here?) adds still more interest and challenge to this game. For one player only. Recommended. -BD

**MARBLE MADNESS (64)**

Electronic Arts  
1820 Gateway Drive  
San Mateo, CA 94404

**INFO-rated**

A noble attempt, but *Marble Madness* for the 64 is just a shadow of the arcade original and the excellent Amiga version (see page 90). I don't know if it's a case of just asking the 64 to do more than it is capable of, or if the programming was not up to EA's usual snuff, but the end result is a visually convincing landscape with marbles that handle like intoxicated turtles. The marble noticeably oversteers, and then (perhaps to compensate) doesn't fall off the track until you have gone way over the perceived edge. Especially frustrating with 2 players. -BD

**ALIENS**

Activision  
2350 Bayshore Frontage Rd  
Mountain View, CA 94043

**INFO-rated**

The movie isn't even out on video tape yet, but you don't have to wait to see Ripley and the gang, 'cause the movie has already made the jump to computer game! There are six complete game sequences in *Aliens* including 'The Drop Ship', 'APC Rescue' (pictured), 'Operations Room', 'Air Duct Maze', 'Newt Rescue', and 'One on One' (where you are Ripley strapped into the power loader locked in mortal combat with the Queen Alien!) The aliens are appropriately creepy, and each sequence is well done & plays quite differently from the others. -BD

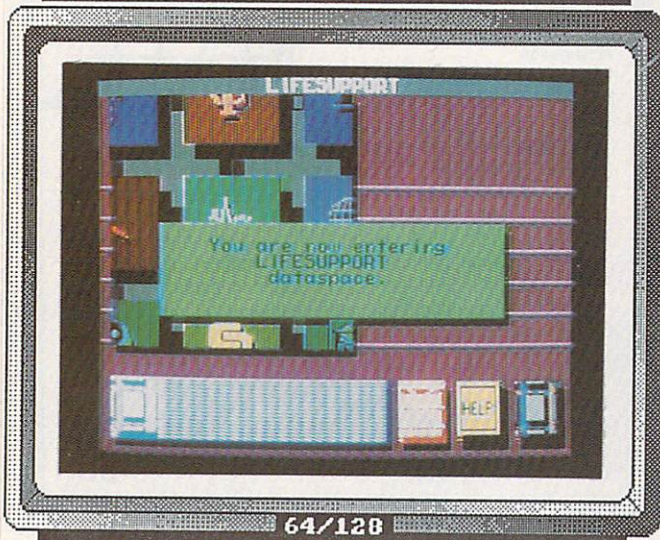
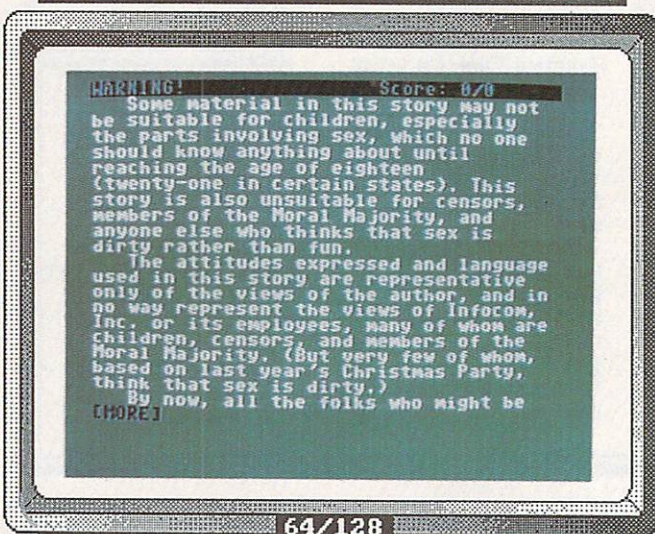
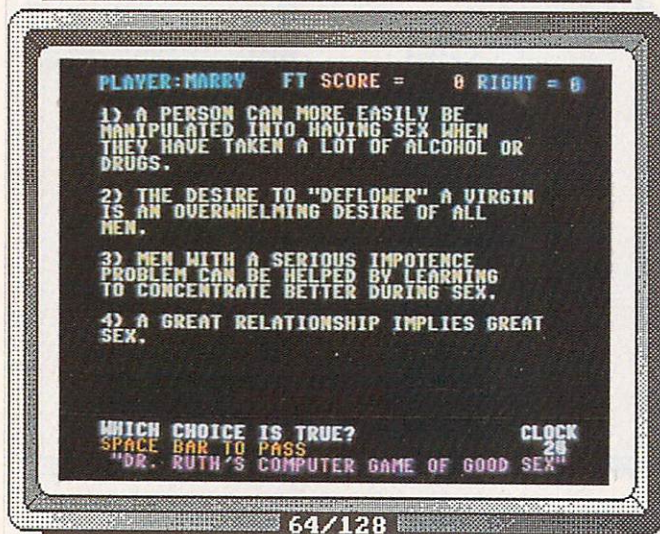
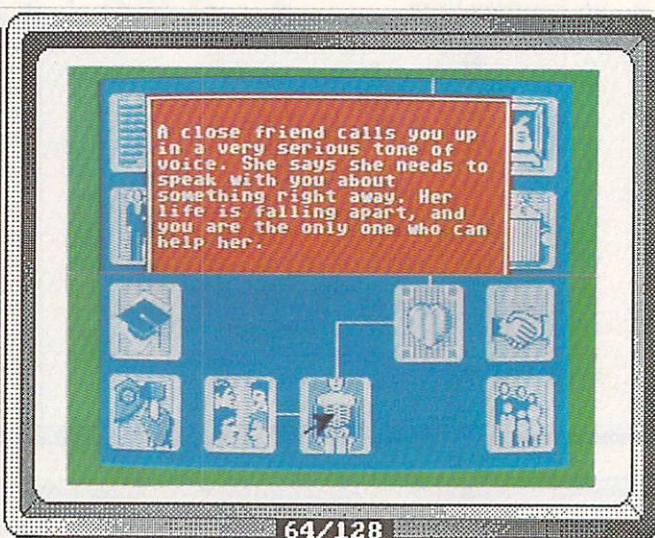
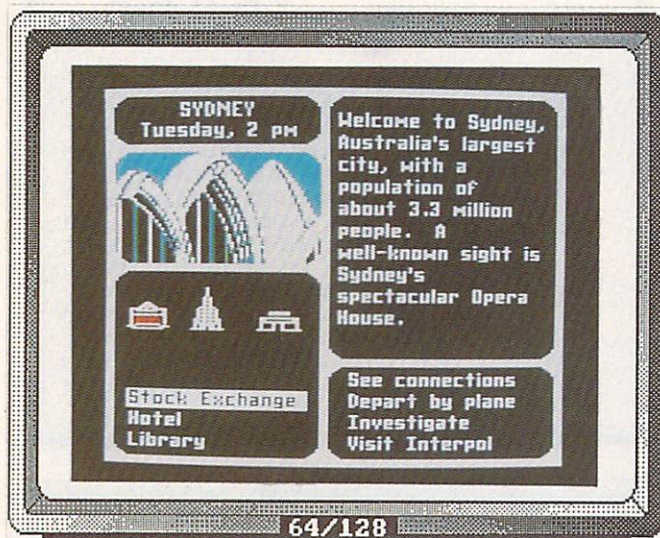
**HACKER II**

Activision  
2350 Bayshore Frontage Rd  
Mountain View, CA 94043

**INFO-rated**

A superior sequel to the original, and very popular, *Hacker*. *Hacker II* gets very involved with some complex audio-visual equipment and the services of a remote control robot (by the time you have fully mastered the video controls, you may find yourself qualified to work as a studio engineer for a major TV network!) An engrossing and challenging espionage game (has the flavor of the old *Man from U.N.C.L.E.* and *Mission Impossible* shows. The documentation is fun, and filled with all kinds of detailed techno-babble, schematics, etc. -BD

# 64/128 GALLERY



**WHERE IN THE WORLD IS  
CARMEN SANDIEGO?**

Broderbund  
17 Paul Dr.  
San Rafael CA 94903

**INFO-rated**



This is a really good educational game. You are a famous detective, and one of the villains of V.I.L.E. has stolen a famous treasure. With the help of the onscreen clues and your trusty World Almanac and Book Of Facts (included) you track the culprit around the world. Besides teaching you how to use reference books, WITWICS will lead you to all kinds of interesting information about the countries you visit, like currency, flags, and population, and you'll hardly be aware that you've been taught. The graphics and gameplay are nice, too. -MB

**ALTER EGO**

Activision  
2350 Bayshore Frontage Rd.  
Mountain View, CA 94043

**INFO-rated**



I really like this unusual and innovative 'game' which, tho not billed as such, is some of the most broadly therapeutic and consciousness-raising software available. Alter Ego is also very entertaining. Describe yourself (male and female versions are available) to the computer, then dive into your hypothetical life at any age level from infant to codger and play out your fantasies, try on new personalities, find out what you'd do if... The box suggests parental discretion, but I would recommend this wholesome software to anyone old enough to read.-BD

Dr. Ruth's Game of Good Sex  
Avalon Hill  
4517 Harford Road  
Baltimore, MD 21214

**INFO-rated**



Now, Fresh from the Donahue show!... that dynamic little sex celebrity (who can't possibly have time for sex herself) has brought her one-person crusade for elevated sexual awareness to the computing community (the last frontier?). There are some very explicit multiple-choice questions in a fairly standard quiz format allowing up to four players to test their knowledge of sexual facts (you may be surprised at some of the things you didn't know!) Very educational, with lots of good information. Not for prudes or 6th grade boys! -BD

**LEATHER GODDESSES OF  
PHOBOS**

Infocom  
125 Cambridge Park Dr.  
Cambridge MA 02140

**INFO-rated**



This sexy spoof of 1930's science fiction pulp novels is fun to play, though Infocom has produced more challenging standard-level text adventures. In this one you must defeat the evil Leather Goddesses, who are bent on sexually enslaving the citizens of Earth. There are a lot of giggles in this one, and you'll run into some real pulp-novel characters and cliffhanger situations along the way. You won't be offended by Leather Goddesses: it has 3 naughtiness levels, and even LEWD is pretty tame. (But watch the scratch'n'sniff smells!) -MB

PORTAL  
Activision  
PO Box 7287  
Mountain View CA 94043

**INFO-rated**



You've gone on a space mission and return to a deserted Earth! You discover a computer terminal linked into the barely-functioning worldwide database. With the help of an artificial intelligence, you try to piece together what happened to the people of Earth. This is an engrossing, fascinating, and somewhat disturbing program. It's like a murder mystery, an expedition, and having amnesia all rolled into one. The graphics are minimal but good, the text is excellent, and the icon-and-joystick interface is well done. Portal takes up 5 sides of 3 disks. -MB

ROBOT RASCALS  
Electronic Arts/Ozark Softscape  
1820 Gateway Dr.  
San Mateo CA 94404

**INFO-rated**



This is a cute game for two to four players that combines a card game and a computer game, which makes it to our knowledge the first "family" computer game (in the same sense as a family board game). The computer part of Rascals is a nice remote-controlled-robot scavenger hunt. The music, sound effects, and graphics are very good, and the robots are well-animated and endearing. The cards have the same feel as UNO, with lots of card swapping. If you've been looking for a computer game the whole family can play, this one deserves a look. -MB

(continued on page 90)

# Vendors' TECH NOTES

*This is the first installment of a new feature which we hope will expand and become a regular part of INFO. VENDORS' TECH NOTES will contain useful and timely information on popular products of the day which by their nature require and merit ongoing support from the manufacturers. In this column, however, most of the information will be written by the programmers and technicians themselves, rather than by INFO staff. We hope this direct approach will create and stimulate a direct line of communication between consumers and vendors, and help spread vital information to a large number of users.*

*We will be starting out with products from Aegis Development, Electronic Arts' Deluxe series, and by next issue, hope to add segments on SuperBase, and other productivity titles as well.*

*If you have any questions you would like answered by a major product vendor (or suggestions for other products needing this type of forum), please send your question to: INFO TECH NOTES, PO Box 2300, Iowa City, IA 52244, and we will forward the most pressing and most interesting questions to the appropriate persons for a publishable response.*



## MAKING AEGIS DRAW METRIC

Aegis Draw is currently based on the English measurement system. All scales are expressed in a "units per inch" system. Draw does not assume that the drawing units are based on an English measurement system, but does assume that the plotter is using English units.

This is simple to change. Refer to Appendix E of *Inside Aegis Draw*. The PlotDriver file provides the information Draw needs to "talk" to the plotter. This file can be altered to create a version of Draw that provides metric scaling.

The pages of *Inside Aegis Draw* you need to look at are E-3 and E-4. The values in PlotDriver that refer to inches are:

**Resolution**, the number of plotter units per inch.

**Width**, the width of the plotting surface in inches.

**Height**, the height of the plotting surface in inches.

**Thickness**, the thickness of the pen in inches.

These are all "real numbers."

If you wanted to use a metric unit for scaling, for example millimeters (mm), you could express these values in terms of mm. For example:

**Resolution**, the number of plotter units per mm.

**Width**, the width of the plotting surface in mm.

**Height**, the height of the plotting surface in mm.

**Thickness**, the thickness of the pen in mm.

When Draw used this plotdriver file, the scale (Options Menu, format Item) would be "the number of Draw units per mm on the plotter." then you could use a decimal ruler (Option Menu, Units Item). If you need to express this in centimeters (cm), just state the values in terms of cm. Draw has been "fooled" into being a metric CAD system.



## Most Commonly Asked Questions

*Why can't I load some of my Instant Music instruments into DeluxeVideo?*

DeluxeVideo only allows instruments that are 24K or less in size, and some of the Instant Music instruments are larger than that. To find out the size of the instrument, use the Info feature in Workbench to check the size of the instrument. Alternately, you can just substitute instruments that you know will work for an instrument that doesn't. For more information on how instruments work in DeluxeVideo, see Appendix B of your Deluxe Video manual.

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# INFO Reader Mail

## INFO ONLINE ON PEOPLELINK, PLAYNET

INFO has added two new electronic mailboxes, so if you're a regular on PlayNet or PeopleLink you can now send us mail as conveniently as subscribers to QuantumLink, BIX, CompuServe, and the folks who still trust their mail to the rusty (oops! I mean *trusty*) U.S. Postal Service. Send your comments, questions, kudos, and complaints to:

INFO Magazine, PO Box 2300, Iowa City IA 52244

CompuServe	INFO 70215,1034
QuantumLink	INFO Mag
BIX	infomag
PeopleLink	INFO Mag
PlayNet	Ben D

## COMPUSERVE

Date: 16-Nov-86 19:56 CST  
From: Ed Corey [74276,1267]  
Subj: 1571 ROM BUGS

I have always respected your magazine, but I have looked in vain in the last several issues for some type of comment about the severe ROM bugs in the 1571 disk drive. This flawed piece of equipment has gone far too long without being corrected, and we owners are the victim. Why have you not reported on this problem?

*It's true that there are some bugs in the 1571, but we haven't seen more or less than in most other computer equipment. The most serious bug seems to be a problem with files that wrap from one side of the disk to the other (though I've never personally experienced it). The 1541 mode is also somewhat less than 100% 1541-compatible, and experiences problems when loading some heavily copy-protected software. But aside from these problems, the 1571 is in our humble opinion probably one of the finest pieces of hardware Commodore has ever produced. We put ours to the test every day, using them for everything from booting software for review to backing up data disks to actually storing all the text for the magazine. The 1571 is fast, reliable, and extremely versatile. It is programmable and can read many different disk formats including CP/M and, with the right program, IBM/PC files. There is no way that we could agree with the assertion that the 1571 has "severe" bugs or that it is a "flawed piece of equipment".*

-Mark & Benn

Date: 15-Nov-86 15:12 CST  
From: Brian Barrett [71350,3271]  
Subj: 64 Terminals

I just purchased a modem and I'm stuck with a cheesy terminal program. Why don't you make yourself useful and do a report on telecommunications? I am positive that you'll make the article informative and entertaining (as usual).

*The latest updates on telecommunications hardware and software will be included in our next issue, which already promises to be our biggest Product Roundup Issue ever! And for regular coverage of the telecommunications scene, check out Peggy Herrington's Network Wars columns.*

-Mark & Benn

## QUANTUMLINK

Mail From: Big Red1  
Date: Wednesday 19-Nov-86 18:04 est  
Congratulations on another excellent issue (#12)! I have two questions/comments: First, what is the usual lag time between when an article is written and when the issue hits the stands?; Second, some of your articles and reviews don't tell us who they were written by (for example, who did the GEOS review?) Come on guys: Give credit where credit is due! (and you people deserve a lot of it.) Keep up the great work!

*It usually takes about three weeks or so between sending our copy to the printer and the first issues showing up on the stands. Our direct dealers (listed in every issue) are the first to receive copies.*

*As far as credit for uncredited articles goes, if it's not signed then either Benn or I wrote it. We figured you'd get tired of reading them if we credited every article to ourselves! -Mark & Benn*

Mail From: GDL  
Date: Monday 10-Nov-86 21:29 est  
Hi INFO! You guys are the BEST! It usually takes me about 10 minutes to flip through any of the other C= mags, but INFO keeps me busy for weeks. I can't wait for the next issue! Keep up the great work.

*Thanks, GDL, for supplying us with our obligatory Reader Mail "INFO is GREAT!" letter. We appreciate it!*

-Mark & Benn

# INFO Reader Mail

Dear INFO,

I am writing to you so that I can get some facts cleared up about copy protection. First off, I used to think that the reason the software publishers put copy protection on their disks was to prevent you from making unnecessary copies of their software. Some of these titles, however, won't even load on third party drives. I think that these titles should not be purchased by the consumer. I recently bought a program for the 64 that will not load on my Enhancer 2000 disk drive, so I bought a \$39.95 copier. This nibble copier zapped through this particular disk's copy protection like it wasn't even there! In fact, this particular nibbler, along with a half a dozen more, will copy virtually anything you put in front of them. So, my question to you is: why is the copy protection going so far? What good is a program if it won't load on your disk drive, but you can still make an unlimited number of backups of it?

Travis Moore  
Jonesboro AR

*Good point, Travis, and one we've been making for a long time. Copy protection makes it harder for the legitimate purchaser of a program to use that program, and very often does not stop the illegitimate copying it was intended to prevent. Some software publishers are waking up to this fact, and have begun removing the protection from their programs. Let's hope this trend continues.*

*-Mark & Benn.*

Mail From: Icarus

Date: Wednesday 19-Nov-86 21:59 est

I just got Superscript 64 and have spent this whole day trying to get my Okidata 92 with Tymac Connection installed. I'm still getting black boxes between words in underline. Only decimal 49 and 48 (nlq on and off) seem to get through. Ted Salamone raves about the printer drivers supplied for the program in his review in Issue #12. Did he actually TRY any of them? I am no novice. If I can't do it, I wonder how the neophyte would make out? Anyway, I always look forward to INFO. When I get my Amiga, that will still be the case.

Obviously there is no way we can test a program with all the listed drivers on all printers and interfaces. For some programs, that would involve hundreds of hours of work. We usually try some of the more common setups and have to assume that the others work. Our only basis for comparison in those instances is whether or not a given program seems to provide drivers for a good variety of printers and interfaces. But we really have no way to know whether or not any one specific setup is going to work properly.

*-Mark & Benn*

Dear INFO,

I enjoyed the copy of INFO #9 containing the "ad" comparing the C128 to the 520ST. Although I'm not very computer literate, I was able to enjoy the sarcasm of your "ad" since it more readily revealed the old adage: "figures don't lie, but liars can figure". I understand clearly now that Atari's ST vs. Amiga ad was another one of those "apples vs. oranges" situations. Your "ad vs. ad" approach was quite clever and made your point much clearer.

I do have one question I'd like answered, though. Your attitude towards Atari (Jack Tramiel) seems to be one of enmity. It's my understanding that Commodore "won" the computer war under his leadership and he was later ousted. I am not arguing with your opinion, just seeking an understanding of its cause.

Les Horelica  
Houston TX

*You know, Les, sometimes even we wonder how we really feel about Jack Tramiel. After all, like you say, he did bring us the Commodore 64 at a great price and led Commodore to the frontrunning position in the Home Computer Wars. He's an aggressive marketer and has managed to do much more than just keep Atari afloat, he's managed to whip them up into being a real contender in the market.*

*On the other hand, we have traced many false rumors about the Amiga back to sources at Tramiel's Atari, and he continues to pass a line to the press that your innocent old grandmother wouldn't buy. Yet a surprising number of computer journalists report what Atari tells them as the gospel truth, much to the detriment of the computing public, and to Commodore.*

*We have nothing against Jack Tramiel personally. He's a fighter and a hard hitter, and he's proved that all the way from Nazi concentration camps to corporate offices. We have a great deal of respect for a man who can live through all that. But we don't have to like how he does business.*

*-Mark & Benn.*



## BUGS

Well, this is why we don't generally print type-in programs: It has come to our attention that the **INFO Lottery** program we printed last issue (**INFO** #12, p. 59) has a few lines that could cause problems. We foolishly used "L" as a variable; it was accidentally printed in lowercase in lines 50-70, and the lowercase "l" in this LaserJet font looks just like the number "1". So if you actually typed the program in, and it doesn't work, check out those lines. Also, in line 320 and 340 some quotation marks got dropped in `A$=` comparisons. The first should say `A$=""` and the second `A$="R"`. And this program was only 34 lines long! I don't see how **Compute!'s Gazette** ever manages to print a program that works!

## BIG BUCKS FOR INFORMATION

There is a plethora of computer industry "insiders newsletters" on the market now. Most are small biweekly quick-printed sheets with anywhere from four to sixteen pages. They cost a lot. The **Information Industry Bulletin**, for example, is a six-page weekly that costs \$200 a year. The most prestigious of the lot, Stuart Alsop's **P.C. Letter** (which includes his infamous Vaporware List), comes out almost biweekly (22 issues annually) and costs a whopping \$345 a year. Just thought you'd like to know what a great bargain you're getting in **INFO**.

## SF COMMODORE SHOW IS GO

We were initially told that the Commodore computer show in San Francisco had been cancelled, but it is now on again. It will take place February 20-21-22 in Brooks Hall. The show runs from 10 am to 6 pm on Friday and Saturday, and from noon to 5 pm on Sunday. There will be the usual mix of free-with-admission speakers and exhibits by Commodore vendors. Admission is \$10 per day or \$15 for the whole show. For more **INFO**, call 1-800-722-7927.

## THE WRITING ON THE WALL

With a view to the future, the Pilot Pen Company has announced that it will begin selling a complete line of printer ribbons through its established group of office supply stores. (FYI: A pen is a pointed, ink-filled instrument once used to create documents manually.)

## NEWSROOM GOES PLATINUM



The **Newsroom** from Springboard Software has become the first software title to receive the Software Publishers Association's Certified Platinum Award. To go platinum a title must sell a quarter of a million copies in all formats.

## C= PC/AT CLONE

Commodore has had a good deal of success with its IBM/PC clones in Europe. So much so that they are bringing the PC-10 and PC-20 into the U.S. market. Now they have announced that they will be building yet another European PC clone, this one a more advanced model that mimics the IBM/PC-AT. There are currently no plans to bring this model to the U.S.

## MORE C= PROFITS

Commodore has posted its second consecutive quarterly profit. For the quarter ending Sept. 30, Commodore made a profit of \$3.7 million on sales of \$176 million. With the healthy sales we are hearing about, it looks like Commodore is back on the track.

## MOS TECHNOLOGY LIVES!

Commodore stopped sales of semiconductors from its MOS Technology Division as part of cost-cutting procedures two years ago. Since that time they have closed one MOS plant in Costa Mesa CA, leaving only a plant in Norristown PA, which has been producing chips for Commodore's own machines. In a recent announcement, Commodore has said that it will again begin selling chips to OEM developers. All Commodore chips except the special Amiga sound and graphics chips will be made available to third parties such as toy and computer manufacturers.

## PIRATE CHALLENGE

This has been a Thing We'd Like To See for a long time: since pirates generally crack copy protection just for the fun of it anyway, why not come up with a game that is nothing but a heavily copy-protected disk? Hide a message somewhere deep in the program and award a "Cracker's Certificate" to those who make it through the layers. Well, Brian Shine Software has come up with it. The **Pirate Disk** has five questions hidden deep within layers of copy protection. Crack your way through to the answers, and they'll give you a free program to reward you for your efforts. Best of all, the game is only \$5.99. Come on all you aspiring pirates, leave the commercial stuff alone and tackle this programming challenge instead! Brian Shine Software, 1410 N. Grand Unit C, Covina CA 91724.

## BRODERBUND WINS SUIT

It's no secret that Broderbund filed a suit against Unison World some months ago, alleging that Unison World's **Print Master** program violated copyrights that Broderbund held on its **Print Shop** program. Even though Broderbund never claimed that **Print Master** duplicated the actual coding of **Print Shop**, they claimed that the program copied the "Look and Feel" of theirs. The District Court agreed, and decided that Unison World would have to alter the way the product looks and interfaces with the user.

This decision is significant in that previously only video games were considered unique in their claims to look and feel. This decision could have far-reaching effects for the producers of all software, especially productivity software which has a great tendency to look similar, anyway.

The court did not issue an injunction against Unison World, which will continue to distribute a version of the program that has been changed to comply with Broderbund's and the court's stipulations. A later hearing (over by the time you read this) will determine what damages, if any, are due to Broderbund.

Tom Miller of Unison World says the new version of **Print Master** is even better than before, and told **INFO** that he wants to reassure his customers and dealers that this decision will not adversely effect the product or the company.

**INFO Commentary:** *With more and more technical and computer-related issues going to the courts, we're going to have to appoint some computer-literate judges who can understand the issues or we're not going to get reasonable decisions. We can't comment on this particular case: We don't have all the facts, and the courts have spoken. But we have to relate what the judge reportedly said when Broderbund's attorneys asked to make their closing statement: "Frankly, I'm so confused that I can't even listen to a closing statement right now." Enough said.*

## FOOT IN MOUTH

Robert Lock, the Editor-In-Chief of **Compute!**, recently found himself in the embarrassing position of having actually believed the inflated figures that Atari fed him concerning sales of the Atari ST. When they issued their public stock offering this fall, Atari was required by law to file the true and accurate figures with the Securities & Exchange Commission, figures which were considerably below those that Lock reported. In the August **Compute!**, Lock had asserted in his Editor's Notes that "the ST (has) an installed base of roughly ten times that of the Amiga. Not a very stirring record (for the Amiga)." **Compute!** then found themselves desperately trying to defend their position against an onslaught of reader protest. In October, Lock said "None of (our) concern over the lessened acceleration of Amiga sales compared to those of the Atari ST reflects a lack of respect for the computer." By December, Lock and **Compute!** had had the opportunity to see the SEC figures for themselves, and still they were defensive of their previous stand: "Perhaps earlier estimates we had received included machines still in the pipeline, or perhaps Atari was simply hopeful. In any event, the Atari ST at that time was outselling the Amiga, although not by the magnitude we then suspected...Maybe we'll have to resort to passive vagueness for future numeric comparisons." It would have been much more courageous to merely admit: "Hey, we bought what Tramiel told us hook, line, and sinker, gang! Sorry about that! Boy, is there egg on our face!"

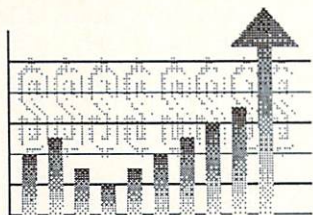
By the way, the SEC figures indicated that 150,000 Atari STs had been sold by June 30. The best figures we can dig up would seem to

indicate about 100,000 Amigas sold by the same date. And consider that the ST had been available for six months longer, the Amiga had barely begun to sell against the ST in Europe by then, and the Amiga is a more expensive machine and so generates more income for Commodore per sale, and the figures look pretty comparable to us.

## INFO ONLINE NEWS

If you frequent the networks, look for INFO online. Though we don't have an area of our own set up on any of the networks, we do get up on most of them on a regular basis to see what's happening and check on our Online Reader Mail (see Reader Mail for our Email addresses). We'll drop into online conferences from time to time to give INFO's Valuable Opinion on the topics under discussion, as well as actually appearing in the hot seat as the Honored Guest for an occasional conference. These things usually happen on the spur of the moment, or at least with only a couple of weeks lead time, so we won't have time to keep you up to date in these pages. There's no doubt in our minds that INFO will eventually have its own area in one of the online services, but we won't do it until we've got the resources to do it right and make it really special. Until then, look for us online!

## COMMODORE STOCK UP



The price of Commodore stock has risen in the past couple of months from a low of \$4.75 a share to between \$8 and \$9 a share as I write this. It looks like Wall Street finally believes that Commodore's financial balancing act is working. With new arrangements with its banks, personnel cutbacks, and inventory reductions, Commodore is tough and lean. They are up against tough competition, but with these changes behind them Commodore should be able not only to survive, but to thrive.

## BIBLE ON DISK

In what has to be the most ambitious independent project to date on an 8-bit Commodore machine, Randall Bernard and a group of hearty volunteers (gleaned mostly through an item in *The Transactor*) have typed the entire King James Bible onto CBM format diskettes. Though the Bible has been available before in rather expensive commercial versions for Commodore computers, this project makes it available for free for the first time. The work takes up both sides of fifteen 1541 format disks, and is available in both standard PET ASCII and Speedscript file versions. If you are interested in a copy, you can write to:

Randall J. Bernard

PO Box 630

Morenci AZ 85540

or call (602) 865-3550. He's also available as ST BERNARD on QuantumLink. Though he hasn't asked for any money, I'm sure a donation would help him to defray some of the costs of this project. What's next? Randall is hopeful that users will begin to develop some support programs to help make using the files easier.

## BASEMENT BOYS LIVES!

Well, we'd heard from all quarters that Basement Boys Software had given up the ghost, but it turns out that Mike Henry was just on a short sabbatical. If you call now, you'll get a recording indicating that the updated version 4.0 of *Fast Hack'Em* is available. We are still hearing rumors that he is pulling back from his own business to work once again with *StarPoint*, where he was instrumental in the development of the original *Di-Sector*. We'll keep trying to find out for sure.

## AMIGA SUPPORT ON BIX

Commodore is moving its official Amiga Developer's Support to the BIX network. Registered Amiga Developers will now have direct access on-line to Commodore's support staff, which should help smooth out the process for developing ever more challenging software on this highly complex machine. This is a very positive step by Commodore, and hopefully it will help to alleviate some of the long delays we've seen in the development of Amiga products thus far.

## AMIGA ON SATURDAY NITE

We missed it, but we read in the Western Indiana Commodore Users Group newsletter that the Amiga was used in a sketch on NBC's *Saturday Nite Live!* The sketch, aired on October 18th, parodied the *Team Xerox* commercials, and Amy played a Xerox computer!

## AMAZING AMIGA

By now you have probably seen the episode of *Amazing Stories* that featured an Amiga as the central player. The story hasn't aired as I write this, but from what we understand it features a computer enthusiast who is pulled into his Amiga and spends the rest of the story communicating with folks via the computer screen. The *Robo City News* says that *Amiga Live!* and various Aegis products were involved in the Steven Spielberg production. Commodore says that Richard Lewis, the art director of *Amazing Stories*, used two Amigas to create the animated story sequences, one to do real-time digitization of the actor, and the other to produce animated overlays. Besides seeing heavy use in this particular episode, Lewis also uses the Amiga in day-to-day applications, especially for the production of storyboards and episode ideas.

## PAINT IT BLACK

Where's the Amiga that was supposed to star on *Miami Vice*? Not that we watch Don Johnson's show regularly, and it's possible we might have missed it. But from what we hear, Amy might not be recognizable on the show anyway. We hear the show's art director decided that Amy would look more "high-tech" *painted black!*

## YO-HO!

Copperstate's *Quick Nibbler* for the Amiga has just taken the *Best Musical Soundtrack In A Disk Copier Award* away from Prism's *SuperKit*. The *Quick Nibbler* plays a digitized soundtrack of some very musical pirates singing a pirate tune as it copies! (Yo-Ho! Yo-Ho!) Certainly not tasteful, but *very* amusing.

## QLINK MAKES BIG-TIME

QuantumLink, the Commodore-only communications network established one year ago Halloween, has announced that it is already the number two network in the country in amount of access time used. (CompuServe is still, of course, number one.) Qlink says that Commodore users burn up TEN MILLION minutes a month on QuantumLink. Let's see...that's 166,666 hours, or 6944 days, or 19 years! Yep, you'd have to sit at a terminal for nineteen years solid, 24 hours a day, 7 days a week, to equal what QLink users do in a single month. We have definitely reached the point where there is *no way* a human being can keep up with what's happening online. (Not even the staff at QuantumLink itself!)

## HABITAT?

And while we're on the topic of QuantumLink, just where in the heck is *Habitat*? This Lucasfilm Productions animated online experience was first announced in June, and nobody, especially not anyone at QuantumLink, can tell us when it will actually go online.

## EA NEWSLETTER

Don't forget to send in those DPaint and DVideo product registration cards! As we mentioned briefly last issue, Electronic Arts is sending a free quarterly newsletter to all registered owners of its Deluxe series of products for the Amiga. It will feature news of new products and product updates, hints on how to get the most out of your programs, and news about EA and users of their products. Best of all, it promises to be less a company newsletter than an informative, informal user newsletter. EA went to great lengths to hire an EA outsider, Amiga enthusiast, and experienced user, our old friend Paul Montgomery of the First Amiga Users Group, as Editor.

## QUOTE OF THE MONTH

"We would rather have seen the Amiga sink than have it become an Atari computer!"  
-an anonymous Amiga executive

## TREASURE

You can participate in a real online treasure hunt on QLink. **Treasure** is an actual quest for a real 24k gold horse with a key in its belly that will open a safe deposit box containing half a million dollars. The horse is buried somewhere in the continental U.S. on public property, and that's all you know to start with. You can order a set of clues online, and then participate in a message base that has been set up for the exchange of information. (*I'm going to help you by sharing my clues?*) It won't be a piece of cake: the internationally renowned puzzlemaker Dr. Crypton was responsible for creating this treasure hunt.

## AIR TRAFFIC CONTROL

At the Amiga Developer's Conference, SubLogic was showing *three* Amigas running **Flight Simulator II**, hooked together via the serial port and using the multiple planes option. The screens of each computer showed all three planes in the air. You can hook up any two computers (including Atari STs, IBM PCs, etc.) running the latest off-the-shelf version of FSII and see the other plane out your window. With a special "host" utility (available through SubLogic) you can hook up several.

## COMPUTER ART

If you've ever wanted to own some really fine computer art, CompuServe is giving you the opportunity to do so. Wayne Schmidt, the Quintessential Commodore Computer Artist who is responsible for the *Middle Earth* picture on the *Doodle!* disk, the *Pen & Candle* picture that Inkwell likes to show off with the *Flexidraw* lightpen, and the *Pola Negri* portrait that did so well in Commodore Microcomputing's last graphics contest, has made available his entire art collection for downloading on the Commodore Art & Music SIG on CIS. The Wayne Schmidt Collection fills *five disks* in compressed format, so it won't be cheap to download, especially at 300 baud, but this is a rare opportunity for you computer art lovers out there to own a collection of Wayne Schmidts. Our local CompuServe connection is so bad here in Iowa City that I'm still trying to download my copy successfully, but if you have better luck in your area, you'll want to get at least one disk from this collection.

## TRUTH IN ADVERTISING



We forgot to say anything about it at the time, but in thumbing thru a stack of back issues of **AmigaWorld** we rediscovered what has to be the most misleading cover blurb ever printed by a computer magazine. On the cover of the May/June '86 **AmigaWorld**, in bold white letters, the issue promises **A Free Word Processor!** A close inspection of the contents reveals that the article associated with the title is *not* a type-in wordprocessing program, but a short tutorial on how to use the screen editor included on every Amiga WorkBench disk! This is a little late, perhaps, but: For Shame, **AmigaWorld!**

## POWER WITHOUT THE PRICE

Chapter Thirty-Two: The incredible sound effects on the Atari ST version of **StarGlider** were reportedly created by digitizing the sounds on an *Amiga* and then porting them over to the ST and creating a driver routine to play them back with the ST's much-less-capable sound chips. I don't make this stuff up, folks, I just report it.

## R.I.P. MICRO FORGE

We got their hard drive reviewed last issue just in time to see The Micro Forge succumb to the ups and downs of the business world, including the fact that they offered only passable products at high prices. Some of their stuff is showing up on the closeout market, but I'd advise you to be extremely cautious about buying something as complicated as a hard drive from a vendor who is out of business. No word yet on whether anyone will pick up The Micro Forge's products.

## CABLE TV AND AMIGA

It's not often that we get to report on a new and exciting Amiga development that's happening in our home town, but this time we've got one. As in most communities, Iowa City's cable television system features a channel for local government access. And, as in most communities, it is for the most part used to flash plain text messages about when the city hall will be closed, and to play an occasional grainy videotape of a boring city council meeting.

But Drew Shaffer, the city's cable TV coordinator, is out to change all that. For the last four years he has been trying to set up a system that would be *interactive*; that would let viewers call in and use a touch-tone phone to scroll through menus on the TV screen to find out all kinds of community information. He first tried to set up a system using an Apple II, but found it did not have the capabilities he needed. He moved on through a Leading Edge, an AT&T, and an IBM/PC before he discovered the Amiga.

He's found the Amiga to be perfectly suited to the project. It's been equipped with 512K of RAM, a Comspec 2 meg fast RAM expansion, a modem, and a printer. Shaffer says they would eventually like to expand the system with a video digitizer and a hard drive.

The IGIV system, which was written in Amiga BASIC with some support routines in C, lets a user dial up the Amiga for three minutes of access time. The Amiga displays a menu of choices covering areas of interest in the community from bus schedules to job opportunities. By selecting items with the touch-tone phone keypad, users can gain access to a great deal of information. The Amiga is not only used to display the information on the screen, but its speech capabilities are used to read the information at the same time. "People seem to really like the speech," says Shaffer, "and we've had some very positive response from blind users."

Shaffer says that even though the system is still in its early stages, and has only been online a half dozen unannounced and irregular times, the average time between callers has been less than one minute. "We log the users in to hardcopy on the printer, to see how much the system is used and to see which features are most popular," says Shaffer. The most popular features thus far have been the online user survey, jobs information, local news summaries, tax and tax fund allocation information, bus routes, and the city council

agenda. "But by far the most popular feature has been the Joke of the Day," says Shaffer. "People seem to like listening to the Amiga actually tell a joke." The monotone "Ha, Ha," that Amy adds after the punchline does seem to make the joke twice as funny.

"This is definitely a commercial product," says Shaffer, "and one that is uniquely appropriate to the Amiga." He sees applications not only in cable TV, but in public access information systems and closed-circuit installations.

They are still coming up with the requisite number of Guru Meditations, but Shaffer has high hopes for the system. And, for now, this Amiga sits in her corner in the basement of the civic center, blithely keeping the residents of Iowa City up-to-date on community happenings.

## AMIGA AT PALOMAR

Astronomers at Mt. Palomar Observatory are using the Amiga to help collect, collate, and display data from their telescopes. The Amiga is used for the calibration of the CCD light detectors used at the objectives of telescopes that study distant astronomical objects such as quasars. Amigas are also used to control the shutter timing on the CCD scopes, and to store the digitized information they gather. A program to directly display the CCD's video images on the Amiga display on-site at the observatory has also just gone into service. Amigas back at Caltech help with other chores. Fred Harris, a member of the Palomar team, says they eventually hope to link the Amigas to the Astronomy Department's VAX computers, and add 40-meg hard drives to the Amigas at the observatory so that they can store multiple images.

## THINGS WE'D LIKE TO SEE

*Amiga:* Mouse speed adjustment from within applications programs. Wouldn't it be nice to be able to draw fast, then slow down for detail work? You can do that now if you want to switch over to Preferences and adjust the mouse speed, then switch back to your paint program. Time-consuming, to say the least.

*Amiga:* Font reassignment from within an application. If your program uses fonts at all, the odds are good that you are stuck with the fonts that you had assigned when you first ran the program. Why not let the user reassign fonts from within the program? Does that make too much sense?



# New Products

## QLINK NEW PRODUCTS

Robert Baker runs a section on QuantumLink's Commodore Information Network in which he tracks new products for Commodore machines. If you're up on QLink, it's worth checking out. He typically updates the information at least every 48 hours. We got several leads on new products from Bob for this issue.

## GENERIC LABEL POCKETS

If you're like me, you reuse old disks until they are worn out, and in the process they accumulate a six-inch thick layer of new disk labels. Well, Weber & Sons, 3468 Highway 9, Freehold NJ 07728, has a new disk labelling system that consists of a clear plastic stick-on pocket and replacable cards. You get 100 plastic pockets, 100 white and 100 color cards \$19.45, or you can check out a sample pack of 25 for \$6.

## C= PC CLONES

Well, here are the specs (finally!) on Commodore's PC clones, which should be showing up in the U.S. shortly: The PC10 has 512K of RAM, a single 360K 5.25" drive, an EGA color graphics card, and built-in parallel and serial I/O ports. It will be priced under \$1000. The PC20 has 640K and two drives, and will sell for about \$1200. Both systems will handle an off-the-shelf 5.25" add-on 20 meg hard drive.

New for the 64

## COMAL TODAY INDEX

If you've got the first 12 issues of **COMAL Today** (and doesn't everybody?), then you need the **COMAL Today Index**. It lists every article in the first twelve issues by title, author, and keyword. With over 4000 entries, it's your fault if you can't find what you're looking for now! \$6.95 + \$2 shpg from COMAL Users Group, 6041 Monona Dr., Madison WI 53716, 608/222-4432.

## 1764 RAM EXPANDER

Commodore's 1764 RAM Expansion for the C64 will come with a replacement power supply for the C64 to provide the extra power

required for the unit. No word yet on how much it will cost (some say less than \$200), but it apparently will give you a full 512K of bank-switched RAM, and may come with RAMdisk software.

## 1581 3.5" DISK DRIVE

The latest word on the 1581 is that it will not ship until the first quarter of next year...at least. Technical details are still sketchy, and some are not even pinned down yet, but it appears that the 1581 will use some form of MFM recording and not Commodore GCR, so it will not be anything like 1541/1571 format. *Nor will it be Amiga format compatible*, even though it will be double-sided with 80 tracks per side. It will provide full-track buffering which will help speed up data transfers over the serial buss and make it reasonably fast. Word is that Commodore is calling this a "high-end" product and will price it considerably higher than the 1571.

## MONEY MACHINE



**Money Machine** is a bimonthly publication from Don Vandeventer devoted to making money with your Commodore computer. The first issue (Nov/Dec) is a thin 40 pages in black & white, and costs as much as **INFO** (\$3.95). The reviews are outdated, and if they seem familiar it is because at least a couple of them are simply rewrites of reviews from ancient issues of **INFO 64**. (Omniwriter? Come on, that one isn't even available any more!) Anyway, until this magazine gets on with it and passes along some *new* information, and provides better value for the cover price, we can't recommend it. The idea is a good one, and we hope that Don can turn it around and make this publication worth the cover price. \$16 for 6 issues, from: Money Machine, PO Box 2618, Ocala FL 32678, 984/622-1022.





## FASTFINGERS

**Fastfingers** is a full-blown SID chip synthesizer software package for the C64. It features 256 presets and allows you to define your own, too. Its menu-driven, and a 4 octave keyboard with full-size keys is optional. **Fastfingers** gives you 10 minutes of real-time recording at 60 notes per minute, and allows fast/slow playback. It includes 13 effects like glide, vibrato, and wah wah. You can also play one voice while the computer plays another. **Fastfingers** is \$24.95, with keyboard \$119.85 from See-Thru Enterprises, 10382 Shenandoah Cres., Windsor, Ont, CANADA N8R 1B5.

## TARDUS SOUND SAMPLER

The **TARDUS-125** sound sampler for the Commodore 64 plugs into the user port and has line in, mic in, and audio out jacks. It's an 8-bit sampler with a variable sampling rate of 1kHz to 30 kHz and will let you pull in up to 41 seconds of digitized sound. It offers some pretty interesting live effects like reverb, chorus, slapback, echo, pitch conversion, sound dubbing, sequencing & editing, and a phlanger. There's even voice recognition software included. It's \$98.95 from Digital Engineering and Design, 2718 S.W. Kelly, Suite C165, Portland OR 97201.

## THE PERFECT COLLEGE

The two big questions most parents have about college are: (1) Which one is best for my child?, and (2) How the heck can I pay for it? Well, **The Perfect College** from Mindscape will help answer the first, and may even give you some clues on the second. With this program, you can select from among 1650 four-year colleges and universities. You feed the program your criteria concerning course of study, costs, location, etc., and it prints out a list of potential selections, complete with addresses and phone numbers. **The Perfect College** is \$19.95 when purchased alone, but it also comes free with *The Perfect Score*, Mindscape's college entrance exam preparation program. From Mindscape, 3444 Dundee Rd., Northbrook IL 60062, 312/480-7667.

## TAX MASTER

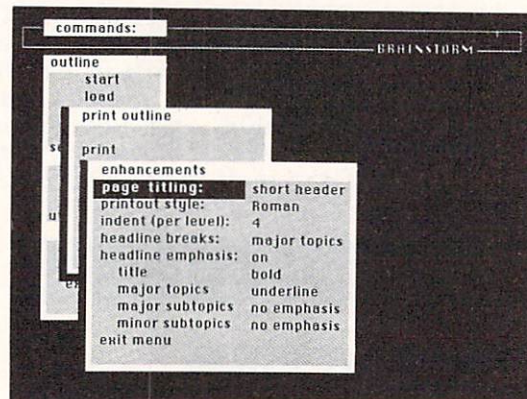
With the new year upon us, it's once again time to start thinking about Income Taxes. Pleasant thought, huh? To help you through this trial, Master Software offers **Tax Master**,

an income tax preparation program for the Commodore 64. This year's version includes a built-in calculator, and has, of course, been updated to match the latest revisions in the tax laws. **Tax Master** is \$30 from Master Software, 6 Hillery Ct., Randallstown MD 21133, 301/922-2962.

## GREETING CARD MAKER

Activision is pushing **Greeting Card Maker** into the growing ranks of printer creativity software titles. This one lets you create (what else?) greeting cards, using eight fonts, two dozen borders and backgrounds, a selection of 50 precomposed verses, and many graphics. You can choose from six card sizes and types, including one 3D popup design. The diskette also includes an envelope maker utility, and an integral address book for up to 128 names and addresses. Unlike some other cardmaking programs, this one will let you save your designs. The package includes 20 sheets of classy printer paper. \$34.95 from: Activision, 2350 Bayshore Parkway, Mountain View CA 94043, 415/960-0410.

## THINKING CAP

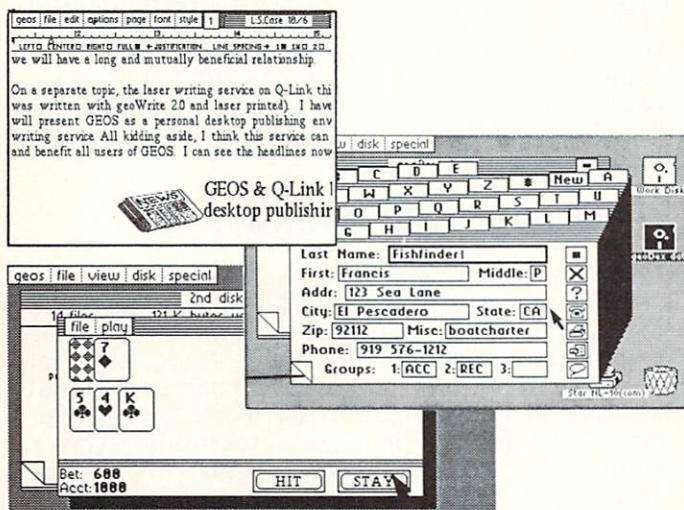


**Thinking Cap** is an idea processor for the C64 from Broderbund. Wish we'd had it in here in time for the Idea Processor article last issue, but like we promised, it looks like idea processors for the C64 will not be in short supply. This one looks very good, with a pull-down menu user interface that is extremely easy to use. It offers up to seven levels of organization, with 16 subtopics per level. Outlines can run to six printed pages. A built-in text editor lets you compose a final draft of your paper after the outline is done. **Thinking Cap** is 49.95 from: Broderbund, 17 Paul Dr., San Rafael CA 94903, 415/479-1700.

## CAPTURE & PROMENADE

Just in case you missed it last issue, we happen to think that **Capture** from Jason-Ranheim is the very best of the cartridge snapshotters. Besides its capabilities as a snapshotter, however, Capture will enable you to make cartridges out of your snapshotted programs. With **Promenade** you can burn EPROMs with snapshotted programs or even with your own code. If you talk to the hardware pros, you will get the consensus that Promenade is in a class by itself when it comes to EPROM programming on the C64/C128. The Promenade handles standard EPROMs to 32k and costs \$99.50. Capture is \$39.95, and a Deluxe Set with Capture, Promenade, and materials is available for \$199.95 from: Jason-Ranheim, 1805 Industrial Dr., Auburn CA 95603, (800/421-7731).

## NEW GEOS TITLES



GEOS seems to be getting an awful lot of support...at least from Berkeley Softworks! Since just last issue they have introduced **Geodex**, an electronic card file with mail merge capabilities, **DeskPak 1**, a set of GEOS utility programs including a calendar, icon editor, blackjack game, and graphics grabber (to convert Print Shop, Print Master, and Newsroom graphics to GEOS format), **FontPak**, a set of new fonts, and **Writer's Workshop**, the awaited enhanced version of geoWrite. Writer's Workshop includes the capability to grab text from PaperClip and other wordprocessors, the same geoMerge utility included in the Geodex package, and a laser printer driver for the Apple Laserwriter. These packages also all include the latest updated versions of the GEOS desktop, with faster, enhanced printer drivers (including one for the HP LaserJet!) and new input drivers for the Commodore 1350 mouse, Flexidraw lightpen, and Koala Pad.

## DIAGNOSE 64

The good folks at Micro R&D have sent along a unique product that will mostly be of interest to the Commodore service technician, though I can see it as a valuable asset to users groups and even hardware types with extra money they don't know what to do with. It's called **Diagnose 64**. This is an oversize cartridge outfitted with a bank of LEDs that will analyze a dead or malfunctioning C64 and tell you just what is wrong with it. Micro R&D's Max Donaldson says if the C64's power supply is operational, Diagnose 64 will tell you what chips are bad in your computer. He says they've pulled chips from a test 64 until it looked skeletal and the cartridge was still telling them what was wrong! Sounds like it could save a lot of bench time at the ol' repair center. Anyway, Diagnose 64 is from Micro R&D, 3333 S. Wadsworth, Suite A104, Lakewood CO 80227, 3003/985-1473.

### New for the 128

## PAPERCLIP II

We've been using a beta version of **Paperclip II** for a couple of months now, and are more convinced than ever that it is still the most powerful wordprocessor available for 8-bit Commodore machines. This version includes many small additions and enhancements, plus the expansion of the active text area to 999 lines. Telecommunications terminal software has been built into Paperclip II, and files can be passed back and forth from the wordprocessor to the terminal and vice-versa using XMODEM or Punter C-1 protocols, a real boon for the active telecommunications buff. Besides this obvious advantage of file up/downloading, having your terminal program resident with your wordprocessor can just plain save you a lot of time swapping programs back and forth. Other new functions include: a macro key capability which lets you enter often-used words and phrases with a single keystroke, output in multiple columns, optional automatic word wrap, and a fast built-in 30,000 word spelling checker which can be upgraded with your own user dictionaries. The manual has been redone, and is very good as well as being spiral-bound. Unfortunately for INFO, the HP LaserJet+ printer is just about the only printer on the planet *not* supported by Paperclip II. This program, like all of Batteries Included's programs, is dongle-protected. \$79.95 from Batteries Included, 17875 Sky Park N., Suite P, Irvine CA 92714, 714/250-8723.



## KYAN PASCAL 128

Kyan Pascal is now available in a C128 version. For \$69.95 you get a true native-code compiler with a built-in macro assembler, a runtime library, 80-column screen editor, and extensions such as include files, string handling, and random files. If this is as good as their C64 version, it will be great, and will be much easier to work with in 80 columns. Kyan Software, 1850 Union St. #183, San Francisco CA 94123, 415/626-2080.

## ABACUS 128 LANGUAGES

It looks like Abacus has picked up the rights to Visionary COBOL, the only COBOL we know of for Commodore 8-bit computers (at least the author's name is the same!) Besides the C64 version, Abacus is offering an enhanced C128 version of the language. I'm no great fan of COBOL, which can best be described as a mainframe monster that reads a bit like Middle English, but there are a LOT of programs out there in COBOL, most of them business applications. If you want to learn COBOL for professional reasons, this looks like a good route to go. Code is upward and downward compatible with the C64 version. The system is basically identical to the C64 version, except you can use 80 columns and the editor and other functions which are implemented as disk-loaded overlays in the C64 version are memory-resident in the C128 version. If you have a minimal system, this compiler will work with a single disk drive.

Also available from Abacus is their BASIC 128 compiler. This surprisingly competent compiler allows you to compile a BASIC program to p-code or machine language. The C128 version is considerably faster and more efficient than Abacus' C64 BASIC compiler. \$59.95 from: Abacus Software, PO Box 7211, Grand Rapids MI 49510, 616/241-5510.

## FLEET SYSTEM THREE

There are getting to be quite a few really good-looking wordprocessors for the C128. One of the latest is *Fleet System 3*. This wordprocessor for 80-column use on the C128 includes a 90,000 word spellchecker, an integral thesaurus and many other features. Like WordPro, PaperClip, and many others, Fleet System 3 is not a what-you-see-is-what-you-get wordprocessor, but a format-command wordprocessor. \$99.95 from: Professional Software, 51 Fremont St., Needham MA 02194, 617/444-5224.

## WORDPRO 128S

WordPro 128/S is the latest addition to Pro-Line's series of wordprocessors for Commodore machines. This version includes a 90,000 word spellchecker and a 40,000 character text capacity, as well as proportional print capabilities. These features, combined with WordPro's solid reputation, should make this version a contender. \$89.95 from Pro-Line, 755 The Queensway E., Unit 9, Mississauga Ont Canada L4Y 4C5, 416/273-6350.

### New for the AMIGA

## AMIGAZINE!

Amigazine! from Digital Publishing is a magazine-on-a-disk for the Amiga. It features software and hardware reviews, programs in many languages, system tips, and graphics, animation, and music demos. Amigazine! runs from the WorkBench. Articles and program instructions can be sent to your printer if you prefer a hardcopy. Single and back issues are \$6.95, 6 month subscriptions are \$35.95 and 12 month subscriptions are \$59.95. 12 issue subscriptions are available overseas via airmail for \$71.95 from: Amigazine!, PO Box 9231, Bakersfield, CA 93389

## A TRUE MULTI-AMIGA

If you want to give *real* multitasking a try, check out Multi User (\$120), a software package which allows you to hook up to 8 or more dumb terminals to your Amiga's serial port. You can hook up a single serial terminal directly to the Amiga, or use a multiplexer for more. Each can run any text-only Amiga application (no pull-down menus, etc.). The system also lets you run a shell, do true cut-and-paste editing, and pipe I/O between applications. From Conceptual Computing, 603 Castlefield Ave, Toronto Ont. CANADA M5N 1L9.

## AMY SWINGS

The Symphony Library from Speech Systems (38W255 Deerpath Rd, Batavia IL 60510) is a series of disks full of music to play on your Amiga. Each disk contains 100 songs (3 hours of music!), and gives you control over instruments, tempo, etc., and even lets you pick your own instruments, including those you have digitized yourself. The Symphony series uses standard IFF music files, and thus is compatible with most other Amiga music programs. It will also play back through MIDI instruments! Each disk (there are eight to pick from) is \$39.95 plus \$3 shipping; you can get a list of all 800 available songs for \$3.95

## PRO VIDEO

If you're into serious video, you might want to check out **Pro Video CG I**, a character generation program with several available styles and sizes of text, individually selectable character color, shadow and edging, grids, and animated transitions. It gives you 32K of text memory. We haven't seen this one, and the price is said to be pretty high. Find a dealer and check this one out if you are serious about it. From **JDK Images**, 2224 East 86 Street, Suite 14, Bloomington MN 55420, 612/854-7793.

## HARD DISK BACKUP

**HardHat** is a hard disk backup program that saves your HD files to floppies. (Not the best solution, but you've got to do something.) It lets you back up all or part of your HD, and provides some kind of data compression to make it more tolerable. \$69.95 plus \$3.50 shipping from: **Westcom Industries**, 3386 Floyd, Los Angeles CA 90068.

## AMIGA EXPANSION

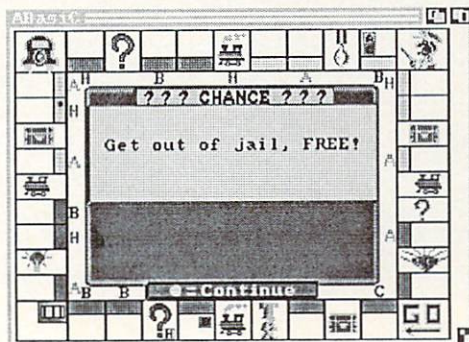
**Pacific Cyprus** has three expansion products for the Amiga. The **Xpander II** is a 2 slot expansion box that already has one slot filled with a 2meg RAM board. The RAM board is a no-wait-state design and uses 256K DRAM chips that can be installed in increments of 512KB, 1MB and 2MB. The **SCSI Multifunction Board** is for interfacing a generic SCSI hard disk drive to your Amiga. A driver program is required on your Workbench disk. The board also gives you a second parallel printer port and another RS-232 port, a battery backed-up clock, and a power supply. The **Modem Board** is a 300/1200 baud Hayes compatible modem on a board. Available from: **Pacific Cypress**, 40127 Landing Parkway, Fremont CA 94538.

## DOS-2-DOS

**DOS-2-DOS** does for the Amiga what **Big Blue Reader** does for the C128: lets it read and copy IBM/PC format files. The latest version will work with both 5.25" and 3.5" MS-DOS formats. Besides being able to translate and copy ASCII files back and forth between both formats, **DOS-2-DOS** also lets you get a **DIRectory** of MS-DOS diskettes, **TYPE** ascii files, and **FORMAT** MS-DOS disks. You need at least one external drive to do all this, and of course that drive must be a 5.25" drive if you are planning on working with standard IBM disks. **DOS-2-DOS** is \$55.00 from: **Central Coast Software**, 268 Bowie Dr., Los Osos CA 93402, 805/528-4906.

## PUBLIC DOMAIN

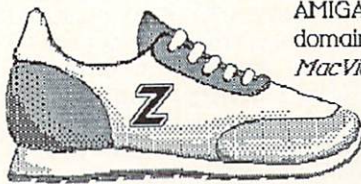
If you are sick of buying PD disks only to find out that 90% of the programs on them are crap, then you might be interested in **Amware's** catalog. For only \$5.95 each postpaid, **Amware** offers over 40 public domain disks for the Amiga. Each has been compiled carefully from only the best public domain offerings. We've got six of the series here, covering telecommunications, games, graphics, and utility programs, and almost without exception the programs are complete, functional, professional, and worthwhile. The **Entertainment #2** games disk, for example, includes **Four** excellent games, **Monopoly**,



Public domain Monopoly.

**Reversi**, **Life**, and **Clue**, as well as several decent demos. The **Graphics #1** disk includes a screen dump program, an **IFF** screen-grabber, a font editor, and the excellent public domain

Macintosh screens converted to AMIGA via the excellent public domain conversion utility, **MacView**. A MustHave!

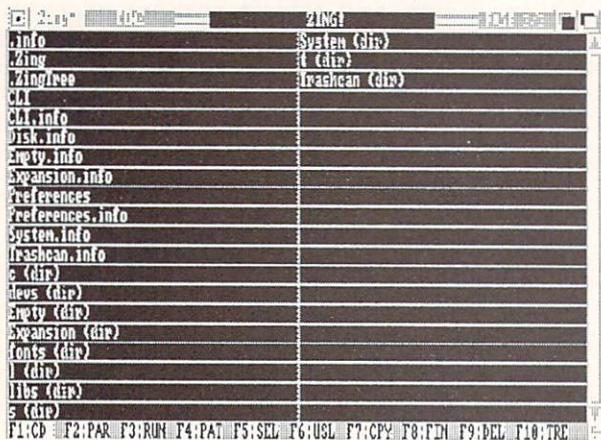


**MacView** program, which allows you to not only view Macintosh Macpaint files (several of which are included on the disk), but convert them to Amiga format! (If there was a Nobel Prize for public domain software, this program would get our vote.) For \$5.95, I don't see how you could go wrong. **SASE** for a catalog. **Amware**, PO Box 19474, Jacksonville FL 32245.





## ZING!



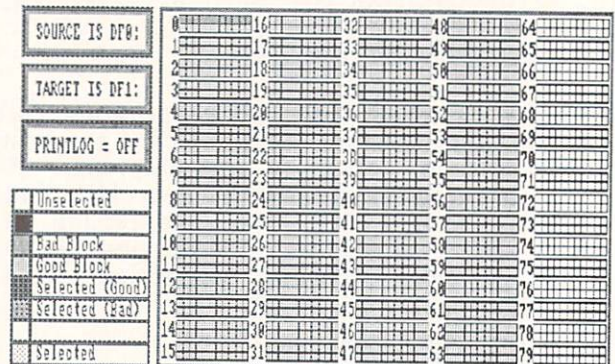
**Zing!** is a hybrid operating system for the Amiga which combines features from the CLI environment and the Workbench, adds versatility, and ends up with something that will let you do just about anything you can do under the CLI, but easier. Much of the time you won't even have to type a filename. Zing! includes file copy and display capabilities, the ability to pop up a CLI at any time via a press of a function key, a print spooler, a screen dump and screen save (IFF) utility, and much more. It is much more fun to use than either of the user interfaces that come with your Amiga. Zing! is \$79.95 + \$3 shpg. from: Meridian Software, PO Box 890408, Houston TX 77289, 713/488-2144.

## BASIC COMPILER

**Softworks BASIC** is a BASIC compiler for the Amiga, but it is *not* an Amiga BASIC or even an ABASIC compiler. Softworks BASIC provides its own version of BASIC based on DEC and Hewlett-Packard implementations of the language. Besides the usual set of floating point and integer functions and string manipulation commands, this version also includes commands for the use of random and ISAM files. What it does *not* have are graphics and sound functions. \$99.00 from: Softworks Limited, 2944 N. Broadway, Chicago IL 60657, 312/975-4030.

## DISKCRAFT

DiskCraft, (C) Copyrighted by Rankin Systems Software 1986. Ver 1.0  
Cyl=60 BLOCK=1328 THRU 1341 PLEASE SELECT A SECTOR FOR CHECKING



This program is a disk surgeon. You use it to analyze and recover crashed disks. The main display is colorful and informative, indicating sector usage and/or bad sectors. All functions are controlled via pull-down menus. It's nice to use. **DiskCraft** lets you scan a disk for errors, format individual tracks, copy sectors, fix errors, locate files, repair the DOS structure, etc. The manual is good, with a lot of tutorial material. Version 1.0 has problems either with version 1.2 of the operating system or with expansion RAM, I'm not sure which. From Rankin Systems Software, 2851 Coleridge Rd., Cleveland Heights OH 44118.

## LEGITIMATE AMIGA USE

If you own a small business and are still looking for an excuse to purchase an Amiga, the **NIMBUS Record Keeping System** may be it. It is said to be simple, colorful, and easy to use. For \$299.00 you get G/L, A/R, A/P, cash accounting, reports and earnings and expense statements. It runs as a multi-tasking application and gives you access to more than one function at a time, and does printing as a background function. It even uses the mouse and menus. Contact **NIMBUS Corp**, 637 Windmill Ranch Rd, Olivenhain CA 92024.



CALMDEX



## COMDEX Report

by Peggy Herrington

There was slim pickin's on the exhibit floor at the '86 Fall COMDEX Show in Las Vegas, although we uncovered several fine Amiga products and even something for the C64. In a bid to move into what has been Macintosh territory, the big deal was desktop publishing on the IBM PC and its legion of clones, with a fleet of laser printers and page layout programs launched for MS-DOS machines. Ventura Publishing, an elaborate package from Xerox, looked good, which it should at \$895. But because it, and everything else we saw requires an AT, it made us wonder how many regular old PCs are going to be upgraded so people can do what INFO has been accomplishing with Commodore equipment and elbow grease for years. PC developers seemed excited about it but even Show Daily headlines on desktop publishing seminars weren't enough to stifle the yawns in the press room.

Exhibitors were scattered about without regard to type between the Convention Center, the West Hall and four major hotels, which made it tough to find C64 and Amiga companies. Neither Apple nor Commodore themselves were there (despite the presence of IBM and Atari), but AmigaWorld hosted a reception for which Commodore/Amiga provided at least a dozen Amigas. It was a madhouse -- a couple hundred people showed up -- and we soon went from elbowing dealers and wholesalers to munching hors d'oeuvres and exchanging gossip. Lots of products were demonstrated there rather than at the show, not only because it was cheaper but because an official Amiga Developers Conference had been held on the west coast a few days earlier. From those attendees, we learned that Version 1.2 of Kickstart and Workbench is being made available on disks with a 40-page manual for \$15 through dealers, a private developers area has been established on Byte's BIX, making it the official Amiga support network, and Fred Fish was presented with an award for his great public domain disk collection. But On With The Show...

Amiga WordPerfect is supposed to be available this spring and will offer all the features that have made it the number-one best seller in the PC world, according to WordPerfect's press statement. Mark Hamilton, the programmer doing the conversion, says the Amiga version will be even more powerful than that for the PC (and the ST and Mac, both of which are being done now) due to its operating system and 880K disk drive. Some of the features include What-You-See-Is-What-You-Get word processing with math and sorting, merging, macros, pull-down menus, on-screen columns, graphic imports, headers, footers, footnotes and endnotes, and an integrated spell checker and thesaurus. I saw a hands-off ('cause was still crash-prone) Amiga demo and it was impressive. Expansion memory is supported and 32 windows can be open concurrently; with macros, according to Hamilton, you can work in all of them at once. IBM-PC WordPerfect is priced at \$495 (mail-ordered it's about \$200), and establishing the price for the Amiga version was the subject of much discussion. They're planning to market it through their existing PC dealers, whom they don't wish to offend with a price cut since it is more powerful, but they also feel that Amiga users won't support that kind of price-tag. For more info, contact WordPerfect Corporation, 288 West Center Street, Orem, Utah 84057, 801/227-4420.

The Creator is an Amiga special-effects generator. Actually, it's a high-tech black box with lots of flashing lights that does the most amazing things to video images. How'd you like to add the black-and-white lead-in that slowly fades to color in *Saint Elsewhere* to your own videos? With The Creator, ShowTime says you can do fades, polarization and posterization as well as monochrome; it



will produce synchronous effects with soft or hard edges, do wipes, cuts, dissolves and superimpose any image, any size, anywhere on the screen. It allows look-ahead previews of 4-matrix video, with high-fidelity stereo inputs selectable from two busses. And, with a new version of *SoundScape ProMIDI Studio* (Mimetics' was actually demonstrating The

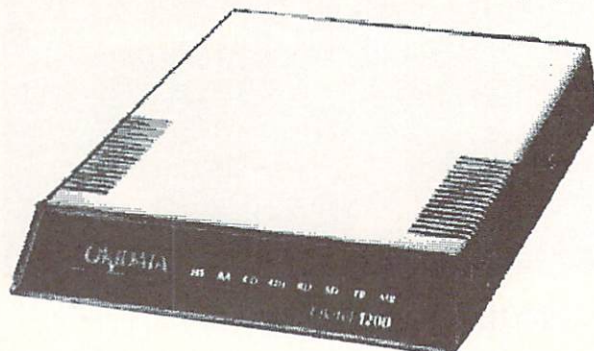
Creator), you can write and synchronize stereo music to video images with professional SYMPTE timing and audio breakaways. (Look, Mom! MTV!) The Creator is 3-5/8"W by 8-1/4"H by 7"D, weighs 3.5# and comes equipped with a joystick, fader bar and 30 built-in patterns plus reverse (for a total of 60). It's available for \$499 from ShowTime, 2715 Fifth Street, Tillamook, OR 97141, 503/842-8841.

Supra's Amiga Hard Disk Drive houses a 3-1/2" drive mechanism with 20-megabytes of storage, a real time clock, and a built-in SCSI port (pass-thru) for chaining other devices. It retails for \$995 and, although none is provided, it will accommodate Supra expansion RAM upgrades from 1/2-meg (\$399), 1-meg (\$449) and so on, to a maximum of 4-megs (although no prices were available for the latter). The drive is 22"L by 5"W by 2-1/2"H and an interface board connects it to the expansion port at the right of the Amiga chassis (which it matches in color). Supra says they will ship January in quantity and will have 30- and 60-meg drives available shortly thereafter, along with a streaming tape back-up which they estimate will be \$899. They were also exhibiting their recently licensed CardCo line of C64/128 interfaces and software (WriteNOW, SpellNOW, CalcNOW) with s'More and Freeze Frame. Contact Supra Corp., 1133 Commercial Way, Albany OR 97321, 503/967-9075, for more information.

The Xebec Hard Disk Drive has a 5-1/4 drive mechanism, the 10-megabyte unit being priced at \$895 and 20-meg at \$1295. The drive is SASI-SCSI but the host adapter and internal full-SCSI bus has provisions for a 2-meg DMA RAM expansion board. Although the first drives will be shipped in January without RAM expansion, as we go to press Xebec couldn't make any guarantees but said they're trying to provide 2-meg RAM boards after purchase (and in future units) at no additional cost. It can reside on the Amiga chassis beside the monitor. The white putty-colored unit is 16"L by 3.4"W by 7.5"H, has no pass-thru but is quiet since it is convection cooled and Xebec says no fan is required. Contact them at 3579 Highway 50 East, Carson City, NV 89701-2826, 702/883-4000.

The Okitel 1200 is Okidata's entry into the PC modem market as it joins their line of 9600 Baud professional units. It responds to standard AT Hayes commands, is Bell 212A (300 Baud) and 103 (1200 Baud) compatible, will auto-dial with Touch or Pulse, auto-answer and will configure itself to match the caller's

Baud rate. It has eight LEDs on its front panel, switches for non-standard configurations at the rear, and a built-in speaker with volume control. Pretty standard stuff so far but get this: Its automatic equalization, Okidata says, will eliminate interference on noisy phone



lines and ignore call waiting signals that normally terminate contact between computers. Retailing for \$449, free connect time and discounts worth \$150 on CompuServe, NewsNet and Dow Jones News/Retrieval will be included. Contact Okidata at 532 Fellowship Road, Mr. Laurel, NJ 08054, 609/235-2600.

Logistix, a project and time management-oriented spreadsheet that works in units from half an hour to years is another of the vertical-market products finding their way to the Amiga. It's integrated with a data base and timesheet (2048 x 1024 cells) and will handle presentation graphics, Critical Path projects and read Lotus 1-2-3 and dBase files. Over 20 graph types are available along with 22 built-in currency symbols. Logistix produces GANT charts, resource histograms and project calendars, will specify scheduling constraints and do what-if calculations using logical operators. It prints reports sideways or straight-up on most plotters and ink jet printers. In fact, if it won't print with your device, they'll configure it for you. \$249.95 from Progressive Peripherals & Software, 464 Kalamath Street, Denver CO 80204, 303/825-4144.

Superbase Personal was completely remodeled and rewritten for the Amiga, based on the C64 version. It's a relational data base management system that uses the mouse, pull-down menus and windows. It's fast; although I didn't time it, PP&S claims it will read a standard name and address file in under 1/300ths of a second from a 3-1/2 disk (B+ tree file structure and advanced disk buffering are credited). You can define reports using relational queries with multiple files and sort levels, and place IFF graphics and CAD drawings within text. Screen output can be arranged in tables or categories, and files can be pulled by subject or page-by-page -- a fast-forward command looks handy for novices. Superbase Personal is shipping now for \$149.95 from Progressive Peripherals & Software (see above).

**DBMan** is also an Amiga relational data base management system using windows, the mouse and pull-down menus and retailing at \$149.95. It is dBase command compatible but, according to VeraSoft, is 60 times faster. Included is a symbolic debugger/editor, data encryption and error trapping with automatic recovery. You can define multi-child relationships with 192 variables and have ten active data bases open at once (memory permitting), and it will accommodate a whopping 2 billion records per file. Versions are available on several personal computers (with no royalties or site licenses required) and it's available now. We can't tell you how it stacks up with other DBMSs from a trade-show once-over. Contact Verasoft Corporation, 4340 Almaden Expressway, Suite #250, San Jose, CA 95118, 408/723-9044, for more info.

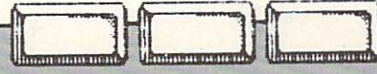
**CLI-Mate** is an Amiga disk management program that bypasses the CLI and Workbench, allowing disk operations with the mouse. By typing only rarely, you can rename and delete files, create directories and make multiple file copies even to the RAM: disk. CLI-Mate will let you adjust print or display options like page length, margins and page numbers and produce output with or without line numbers in hexadecimal or ASCII. It has a fast format utility and pattern/wildcard matching. CLI-Mate was done by Chris Nicotra, author of the public domain program DIRUTL which is similar but less extensive. \$34.95 from Progressive Peripherals & Software (see above).

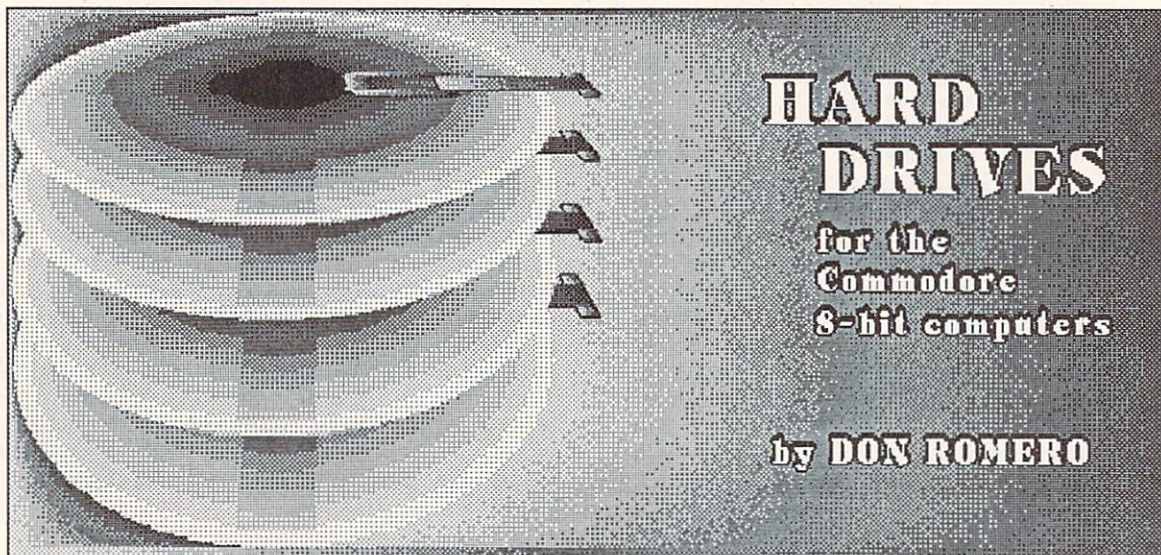
The **Polaroid Palette** was shown at the reception. It's an Amiga peripheral that lets you take instant Polaroid or developed 35mm screen shots without focusing a camera. Pictures are taken internally with the **Imprint** software included with the unit which consists of a Polaroid Palette film recorder, 35mm camera back, 3-1/4 by 4-1/4 instant camera back (back means there's no lens assembly), and Polachrome instant film processor. In seconds, it will plunk into your hand a perfectly focused, instant Polaroid snapshot of any image you can get on the screen (low, medium or high resolution), and it will produce 4-color separations and do continuous-tone black-and-whites as well. My untrained eye was amazed at the quality of the instant prints (no raster lines or screen-bend) but if that's not good enough, you can use 35mm film and have it developed. The unit itself is about 11"Dx6"Wx5"H. It plugs into the composite video and serial ports, and comes with cables and all accessories. It's available now for \$2,495 from Liquid Light, 2301 W. 205th Street, Suite 106, Torrance, CA 90501, 213/618-0274.

Unicorn Software introduced an extensive line of educational software for the Amiga. They demoed **Fraction Action** for ages 8 and up, and **Decimal Dungeon** for ages 9 and up, both for 1 or 2 players with individual difficulty level settings and optional timers. Three more programs will ship in January: **Kinderama** for preschooler to 6-yr-olds, **Math Wizard**, 1 or 2 players aged 5 to 13, and **Animal Kingdom** featuring zoological species including prehistoric, jungle, fish, insects, amphibians and birds in six activities for 1 to 4 players, ages 6 to 12. Each is \$49.95. Unicorn plans to release an Amiga package each month next year. Unicorn Software, 2950 E. Flamingo Road, Greenview Park Suite B, Las Vegas NV 89121, 702/737-8862.



**Hearsay 1000** is a speech synthesis and recognition device that lets you hear and respond to your C64/128 by voice. It retails for \$79.95 and will work not only with their special programs but with pre-existing third-party software as well -- it was demonstrated with Infocom, Epyx, Spinnaker and Batteries Included programs. Hearsay's Software for Children (\$29.95 each) will run with or without the unit and includes: **Rhyme & Reason**, which uses nursery rhymes to teach 2 to 5 year olds language concepts and names of animals, etc., **Aqua Circus** which teaches shapes, colors and numbers to 2 to 5 year olds, and **Think Bank**, for 6 to 10 year olds, which does numbers, equations and math problem-solving. The **Hearsay Talking Terminal** (\$29.95) when used with the Hearsay 1000, will auto-dial on voice command and speak incoming text. Hearsay, Inc. 1825 74th Street, New York, NY 11204, 718/232-7266





After painful years of struggling with the speed and memory limitations of the 1541 disk drive, four independent companies strewn from Oregon to Florida prepare the release of inexpensive hard disk drives for the Commodore 64 personal computer.

Synchronicity?

Perhaps. But one thing we know for sure: it's about time! The four hard drives entering the market are the JCT-1000 series from JCT, Inc.; the Lt. Kernal from Xetec (previously available from Fiscal Information; see articles in issues #6 and #10); the ICT Data Chief from In Con Trol, Inc.; and Device 9 from Progressive Peripherals & Software. Add these to the two other hard drives already available --the ST10C from Computer Specialties, Inc. (reviewed in issue #9), and the discontinued D9060/D9090 from Commodore itself -- and you have a healthy selection of hard drives for the Commodore 64 and C128 to choose from.

## HARD DISK ADVANTAGES

The chief advantages of adding a hard disk drive to a system are having large amounts of data online at one time, the capacity for creating very large REL or SEQ data files (up to several megabytes), and the potential for greater access speeds. Add to these the questions of compatibility and price, and you have the major factors for determining which, if any, of the available hard drives are right for your needs.

**MEMORY:** Imagine having 19442 blocks (five megs) or 38882 blocks (ten megs) free without having to swap disks! For the power user this kind of data storage is essential. Similarly, when handling database, BBS or other applications that use lots of data, it's not terribly difficult to over-reach the 1541's 170K file length limitations. A multi-megabyte hard disk drive option puts the 64 and 128 in the same league as an Apple II for satisfying small business and educational classroom needs but at a far better price/performance ratio.

**SPEED:** Internally, a hard drive outperforms a floppy drive by factors of 10 or more. But a hard drive connected via the serial bus is only going to offer marginal increases in overall speed. Note that none the serial-connected hard drives work properly with current versions of disk speedup utilities like Fastload or Mach 5.

**COMPATIBILITY:** Unprotected or dis-protected programs and programs that make standard 1541 DOS calls readily work with all of these drives, all of which are intelligent and programmable to some degree. But predictably, each of the hard drives mentioned have problems with some copy-protected programs, programs that bypass, override or reprogram the 1541's DOS, and, with one exception, Commodore's version of CP/M.

**PRICE:** The final factor is, of course, what you can afford. The lowest list price (\$695 for 3.7 megs) still may be too rich for most users, but prices are bound to drop. And keep in

mind that *per kilobyte of online memory*, a hard drive is more cost efficient than a floppy. A 10 meg drive for \$895 comes to about 9.2 cents per K (cpK) as compared to the 1541 (84 cpK at \$149) or the SFD-1001 (28 cpK at \$299).

#### COMMENTS

The table presents the major features of the six different hard drives that should be available by the end of the year. There may be other hard drives down the road, too. Both Commodore and Skyles Electric Works (of **Blitz!** and **1541 Flash!** fame) have recently made noises in the hard drive direction. But for now, this is the selection:

**D9060 / D9090.** Not designed for the 64 but works fine using an IEEE interface. These Commodore drives have been discontinued, but are built like tanks and can still be found. Many are in use in BBS systems. I could have sworn that I saw in some user group newsletter that warehoused D9060s were being sold 'as is' for \$295, but several frantic searches through my meticulously maintained files <!-- failed to turn it up. (I've also been told that the D9090 had some quirks...)

**ST10C.** From Computer Specialties, Inc. This drive is the only readily available hard drive for the 64 as I write, and CSI has just slashed the price by \$600, to \$995, no doubt in response to the burgeoning competition. It has both serial and IEEE connectors, and one of the ST10C's nicer features is a built-in backup routine that saves the files on ST10C to any disk drive that's connected to it, if you can stand the many hours required to do so.

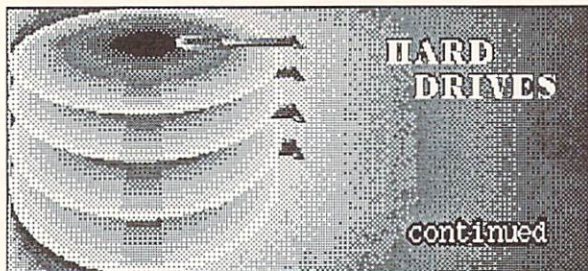
**JCT-1000 Series.** These drives should be on the market (and discounted) by the time you read this. I talked to Ray Rippey, JCT's chief programmer, and several changes and additions are in order since the feature pre-review of the JCT-1000 in the September 1986 issue of **COMPUTER SHOPPER**. A routine for handling subdirectories (a hard drive must!) has been added to the operating system. The JCT's DOS is all in ROM and the only the Master Jumptable is loaded into the drive's RAM at startup. This makes modifying the drive's routines easy! And a dual 10 meg drive (the JCT-1021) is in the works and due for release sometime early next year.

**ICT DATA CHIEF.** This hard drive is unique in a number of ways. It comes equipped with a (very) 1541-compatible floppy drive. It is factory-formatted into 170K partitions -- about 60 per each 10 megs -- for

enhanced 1541 compatibility. (A special file chaining command helps to overcome the 170K file length limitation.) It has a large case and powerpack for internal expansion to up to 80 megabytes! And finally, it works with both the 64 CP/M cartridge and the 128's CP/M mode (as a single-sided Commodore 1541 drive only.) The one difficulty is the lack of a CP/M command to switch partitions. Also, a second serial bus connector required for daisy-chaining was missing from the pre-production model.

The chief advantages of adding a hard disk drive to a system are having large amounts of data online at one time, the capacity for creating very large REL and SEQ data files, and the potential for greater access speeds.

**LT. KERNAL.** This is the FAST hard drive that really started the current hard drive commotion. Rather than creating a 1541 work-alike hard disk, Fiscal Information designed the Lt. Kernal to be a true (i.e., very fast) hard drive that is compatible with the Commodore 64 and its software. The Lt. Kernal's DOS is currently about 170K long, completely upgradeable and bank-loads as needed into the expansion port interface's 16K of RAM. Besides adding over 40 new or improved commands to the 64's repertoire, the Lt. Kernal features an ISEPIC-like utility for installing protected programs on the hard disk in such a way that they cannot be off-loaded back to a floppy disk. What about speed? The early versions of Lt. Kernal could transfer 25K bytes (a 100 block program) in about one second, or about 43 times faster than a 1541. The release version can load or save about 38K in the same one second. With a 128 in the fast mode, the



transfer rates are just about double. That's FAST!

Originally, Cardco was to manufacture and market the drive, but Cardco folded and now Xetec has picked up the project. They are hoping to have a product out the door by the end of the year for under \$899. For the Lt. Kernal to work with the 128 a special card must be installed *inside* the 128. For the squeamish or multiple-thumbbed, Xetec will install the \$29.95 upgrade for free (excluding shipping costs.) A DOS upgrade for the CP/M mode is currently in the works, but no release date has been set.

**DEVICE 9 - THE VAULT.** This is the newest entry into the 64 hard drive derby, from Progressive Peripherals and Software. According to programmer Scott Maxwell, The Vault is designed to be very compatible. For instance, creating a subdirectory is as simple as formatting a disk on the 1541. It's the only drive so far to support the 128's fast serial mode and it also works fine with Superbase 64.

## CONCLUSIONS

All of the current hard drives offer outstanding CBM DOS compatibility and (with only one exception) excellent value for the price. But at this point only the Lt. Kernal does not sacrifice the speed potential of a hard drive (or cost an extra arm or leg) to get there.

Eventually there will be speedup utilities for all of the drives that use the serial port, but the potential gain, as with the 1541, is severely limited. Until other hard drive makers can provide a parallel interface with the 64, either through the expansion port or the user port, the Lt. Kernal will remain in a class pretty much by itself.

But the main thing is: they're finally here. If you're one of those who have moaned and groaned for a hard drive for your 64, the choice is now up to you. Enjoy!



Table 1: Hard Drive Comparisons

Drive Name	Mega-bytes	Avail-able	Price	Port	Turbo Utility	Sub Directory	Logical Devices	128 CP/M	Super Base?
D9060	5	now	*1*	IEEE	no	no	no	no	yes
D9090	7.5	now	*1*	IEEE	no	no	no	no	yes
ST10C	10	now	\$ 995	serial,IEEE	no	no	no	no	no
JCT-1000	3.7	11/86	695	serial	soon	yes(255)	no	no	soon
JCT-1005	5	11/86	795	serial	soon	yes(255)	no	no	soon
JCT-1010	10	11/86	895	serial	soon	yes(255)	no	no	soon
Data Chief	10	12/86	899	serial	soon	*2*(60)	*2*(60)	yes	*4*
	20	12/86	999	serial	soon	*2*(120)	*2*(120)	yes	*4*
Lt. Kernal	20	12/86	899	64 expan.	yes!	*3*(160)	yes(10)	soon	*4*
Device 9	10	12/86	\$ 600-	serial,IEEE	soon	yes(256)	yes(10)	no	yes
The Vault			900	fast serial					

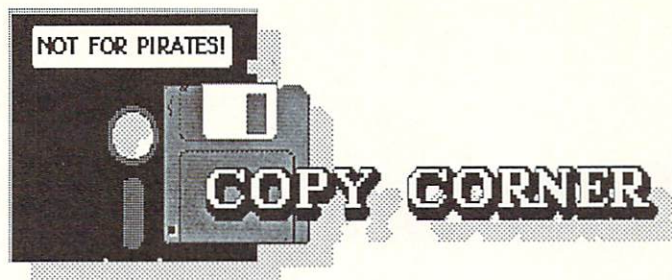
### NOTES.

\*1\* Discontinued; used prices vary.

\*2\* Hard drive is partitioned into 170K segments.

\*3\* Sixteen (16) subdirectories per logical device.

\*4\* Works with REL file version but not older random file version.



## SUPERKIT



If you've been following this column for very long, you know one thing: it's hard to keep up with copy protection on Commodore computers. When it comes time to make a backup copy of the latest, greatest game or productivity title, you need the best tools you can get. The best we've seen to date is **SuperKit** from Prism Software.

**SuperKit** is a copy program for a Commodore 64 or C128 in 64 mode and one or two 1541 or 1571 drives or close clones. (It seems to work fine with our FSD-1.) If you use a 1571 it will run only in single-sided 1541 mode. Prism plans a separate 1571 copy program for the future.

There are so many tools on this disk that it takes up both sides of a 1541 floppy. This disk includes both single drive and two-drive fast normal copy routines, single and two-drive nibble copiers, a fast file copier, a single drive Super Nibbler copier, the Disk Surgeon parameter copier, an error scanner, a disk editor, a GCR sector editor (!), Prism's SuperDOS fastloader, and an autoboot maker. All for \$29.95! That's what I call value!

The normal copiers and nibblers are fast and reliable, and the two-drive copier plays some hot rock'n'roll as it copies! These copiers and nibbler copiers are "smart" and will copy only sectors that actually contain data. You are usually safe just going with the defaults and letting them take care of business, but if you want to mess around with the settings you can control the tracks copied, track increment, number of sync bytes, header gap length, sector gap length, header block length, and whether or not you want the copy verified. Remember, these are the *simple* copiers on this disk! If all that confused you, just hit RETURN and let it copy by itself. Those options are there for experts only.

The file copier is very nice all by itself. It lets you scratch files, read the BAM, and even get to deleted files. It's fast, and flashes by the file data on the screen as it copies, which is at least entertaining.

The Super Nibbler is a heavy-duty copy program which runs on only a single drive. Besides being able to copy programs with heavy protection, this copier is the one you'll use to make a backup of SuperKit itself. Yes, SuperKit *does* copy itself, but the copies you make *will not* back themselves up. This "single generation" backup capability is something we first saw in **Ditto** from Cardinal Software, and I personally think it's a great solution to the copy protection-vs-piracy issue.

Additional tools for the pro include the error scanner, which simply reports which DOS errors occur on which disk sectors. The sector editor is okay, and even includes a m/l monitor. I still prefer **Peek-A-Byte**, but the advantage of this one is that it is included on the SuperKit disk and you don't have to switch back and forth to use it.

The GCR editor is unique to SuperKit. I don't think I've ever seen another. This is *definitely* for pros only, and if you don't know what GCR means then you'll never need this editor. But if you *do* know, this could be a powerful tool for you to have.

The SuperDOS fastloader comes in three varieties for various applications. I'll be frank and admit I haven't played with them much. To be most useful, I think a fastloader needs to be in ROM somewhere so it doesn't get wiped out by every other program you load. Prism has SuperDOS coming on a ROM chip, and I'll take a closer look when that's available. In the meantime, you might want to play around with the versions on this disk.

The last utility is an autoboot creator which will covert your programs to an autobooting SuperDOS format.

SuperKit's Sector Surgeon is a parameter copier. For extremely heavily copy-protected programs, a parameter copier is often the only way to copy the program. Here's a brief explanation of how they work: As a copy-



protected program loads, it checks for certain disk errors, or false data, or encryption. If it doesn't find what it's looking for, it aborts the load and may even nastily inform you that you are a scum-sucking pirate who doesn't deserve to coexist on the same planet with honest, hard-working programmers. Anyway, sometimes the only way to get around all this is to actually *rewrite the program* so that it no longer looks for anything fancy, and just gets on with the process of loading. This is what parameter copiers do. They actually replace the portion of the software that checks for copy protection with innocuous, safe code. The result is that the copy runs like the original, but it no longer checks for copy protection as it loads. Thus, it is not only copied, *it is de-protected!* This means that a program that has been "busted" with a parameter copier may be copied over and over again with a simple copy program. The copy protection is gone. The downside of this method is that you have to develop a parameter specifically for each and every program you want to copy. This requires the frequent updating of parameters to keep up with the latest releases.

SuperKit's Sector Surgeon includes 400 parameters on the SuperKit disk, which is an incredible number. (Some parameter copiers, like **Kracker Jax**, charge \$19.95 each for disks which contain only about 100 parameters each and nothing else.) Periodic updates will be available from Prism on a regular basis. Their first parameter disk will include the first known parameters for the Pocket series from Digital Solutions. The Sector Surgeon is an excellent parameter copier and is easily by itself the equal or better of any parameter copier I've seen.

SuperKit's manual is in terribly small print and is a real pain to read. But all the information is there, and the back half of the manual is devoted to a terrific history of copy protection on Commodore machines written by Rob Vaughn. Even if you don't buy SuperKit you ought to borrow the manual from somebody and read this. It's great.

Best of all, Prism is extremely sensitive to their customers' complaints and suggestions. They seem to be dedicated to making sure that SuperKit remains the very best disk copy program for the Commodore 64. That counts for a lot.

We don't hand out five-star ratings much. A product has to go way beyond the call of duty to get one. We gave our only other five-star copier rating to **Fast Hack'em** when it came out for its innovative programming of the 1541 drives to act as a stand alone copy machine. SuperKit won't do that. But what it *does* do is give you all the tools you need to copy just about any program on the market, and much more. It's an excellent value, and a five-star program.

SuperKit is \$29.95 (+\$3 shpg.) from: Prism Software, 401 Lake Air Dr., Suite D, Waco TX 76710, 817/751-0200.

An Amiga version of **SuperKit** with a full load of extras will be available soon for \$29.95.



*Next issue is our Product Roundup of over 2000 C64, C128, and Amiga products, including copiers. In Issue #15, Dr. Richard Immers, author of Inside Commodore DOS, will be taking over Copy Corner. He'll be digging deep into the topic of copy protection and commercial copiers for all three Commodore computers. We can imagine no one more uniquely qualified to keep you up-to-date than Dick. Look for his column starting in issue #15!*



# How We Created the AMIGA Computer

by Robert J. Mical



Hi. I'm RJ Mical, one of the people who created the Amiga computer. Mark and Benn, the editors of this magazine, have daringly invited me to wax Amiga-esque for you folks. The sane among you won't want to read this article, and should stop now. To those of you who intend on reading this article: well then, wax I will, until your foreheads are shiny. Ready?

As I understand it, the goal of Info magazine is to get real information into the hands of its readership. I thought about that, and decided that I might best contribute to this noble effort by revealing to you one of the least known, most interesting facts about the Amiga: the secret of how we created the Amiga computer.

You might be surprised to learn the truth about this. Many people think that we worked long and hard to create the Amiga, but that's not so. Actually, it was very easy to create the Amiga; we did it in one afternoon. Impossible, you say? Well it's true. We were able to pull off this fantastic feat because we had access to an amazing device known as the Amiga Joyboard. Let me tell you about it ... The Joyboard was created in 1983 by a company named Amiga Computer, Inc., a company which ostensibly made computer game peripherals such as joyboards and joysticks. The joyboard was in fact a joystick designed to be stood on. It was great fun to play skiing and surfing games using the joyboard, and seriously fun with Olympic sports games that required a lot of running in place, though of course these were usually more exhausting than enjoyable.

Kids loved the Amiga joyboard. Suzy Chaffee -- you might remember her as Suzy Chapstick -- loved the joyboard too. Suzy was (and probably still is) an excellent skier. She appeared on morning news programs and at toy fairs playing a skiing game to demonstrate the Amiga joyboard. She wore ski clothing, carried poles, and had some fun pretending to ski on the joyboard. We had some fun watching her do this.

Somewhere in the Amiga building there still floats a trophy that had been awarded to Suzy but which she abandoned in our offices. The last time I saw her I reminded her of this trophy, but she shook her head no and that statue has haunted us since. It looks like a hood ornament from a 50's car on acid. I thought I'd finally buried it for good when I left Amiga, but it has craftily unearthed itself since. I'd made the mistake of not burying it with a joyboard at its side. But while the public watched Suzy balance on a joyboard, in the dark back rooms of Amiga's main building the Amiga team used the joyboard for an altogether different purpose. We used it to play The Zen Meditation Game.

The object of this game was to sit completely motionless on the joyboard for as long as possible while contemplating the complete nothingness of the vast emptiness of the immaterial void, or something like that. If you reached nirvana you got big bonus points. I've known some people who played this game very well, even without the benefit of a joyboard. It was one of the greatest games ever made. OK, so maybe it wasn't exactly one of the greatest games ever made, but it had its moments. We created the Amiga computer while playing this game. Imagine this scene from the early days of Amiga:

We sat motionless atop high chairs with eyes closed and hands and fingers raised in enlightened poses. Our legs were crossed, and beneath our bottoms were Amiga joyboards. There was a faint hum in the air, the thought song of machine and man. It was our chant, our mechanized mantra; we were all deep in meditation. A nearby dog barked, and its



essence was Buddha nature to our system-softened minds. We were playing the Zen Meditation Game.

Almost all of the Amiga people were there to play: art, sales, marketing, accounting, manufacture, hardware, and software. Even Mitchy the dog was poised in balance with its little paws held forward. The room was darkened and scented just lightly with the fragrance of lotus flower blended with whiffs of rice cake and coffee burning at the bottom of the coffee pot. There was a noticeable lack of cigarette smoke in the air. A gentle breeze blew from a fan in the doorway.

To digress for a moment: boy did we need fans in those days. All the equipment we had jammed in those rooms threw off a lot of heat. The people who worked there slowly cooked as the day went by, so we always had fans running to move the air around. This type of ventilation system is also called CONVECTION OVEN. If you want to understand what it was like to create the Amiga computer, you have to understand the concept of convection oven.

And as long as I'm already digressing, allow me to digress more wildly: the RJ which is my moniker is short for Robert Joseph, in case you were wondering (if you weren't wondering, skip the rest of this paragraph). In the old days before I moved to California I used to be known mostly as Bob, but when I went to California to help build the Amiga I became one of four Bobs in the Amiga software team. During the first week that we worked there together so many people came in the room and said "Hey, Bob" that we all got whiplash, so the boss got to be Bob while suddenly the rest of us became Rob, RJ, and Kodiak. That's Kodiak as in the Kodiak bear. And for good reason.

But I digress. So there we were, all of the Amiga people meditating together in the same room with our eyes closed (if you didn't know, this is what most Silicon Valley people do for a living). Perhaps it was the wine that made one of us think: Well, joysticks are fine, but how about if we created a computer too? This seemed like a reasonably good idea, so everyone started dreaming about the Perfect Computer.

A short while later, refreshingly cool winds started to rise from the doorway and the air began to glow with a pearly light. We started to feel transcendental. Through the door came a tall gentle man surrounded by a soft glow: Dave Morse, Amiga's fearless leader. Our thirst was quenched and our fears were assuaged. We floated up off our joyboards. "The Amiga Computer is done!" Dave exclaimed, "Let's call it a day."

And that's all there was to it. Easy, eh? You could do it too, honestly. To this day, none of the Amiga people has ever come out of that trance. Most (80% so far) simply floated away. I miss them. Some (20%) are still chanting. I miss them too. It was a splendidly superb time, those Amiga days, the days of the Busy Guy.

I left Commodore by choice in January 1986, and have been doing work with the Amiga ever since. I've worked on system stuff and games, and I've done some writing and some talking too. Currently, I'm working on my Electronic Arts game. It's coming along delightfully well; I hope you enjoy playing it as much as I've enjoyed creating it. I don't have an ETA yet. Real Soon Now, as we say in the industry. Everything that's being worked on in Silicon Valley will be available Real Soon Now.

I'm sticking with the Amiga, keeping the faith.

This article, by the way, is dedicated to all Amiga owners, especially those of you who paid something (anything, even if sweat) for your computer. As I have noted many times, it is obvious to me that you are among the most intelligent people in the world.

I am delighted and proud that you have chosen to own an Amiga. We poured our hearts and souls into the making of that machine. The Amiga is the most powerful personal computer around. But we wanted more than just power. We tried to create a computer environment that would be useful and accessible to everyone, not just engineers. We tried to build a computer that would enrich and entertain. I hope we succeeded. Time will tell. Hang in there, keep the faith. And tell, time, tell! Perhaps you think I've been kidding about some or all this. Not true.

Most of you have probably never seen a Guru Meditation alert (ahem), but if you have perhaps you can imagine how Zen Meditation would lead to Guru Meditation, and how Guru Meditations can lead to Zen Meditation. Actually, by its purest definition, Guru Meditation is a state of mind in which many Amiga users find themselves. Double entendre intended.

And regarding Suzy Chaffee, I visited Amiga yesterday after I wrote the paragraph above about Suzy's abandoned trophy. I have reclaimed (with permission) Suzy's trophy for my own now. It's here before me. Get this: she won it for heroic skiing in the Hawaiian Tropic Celebrity Pro-Am, Breckenridge, Colorado. Hmm. Suzy, if you ever want this back please just let me know. Until then, such historiata should not be neglected, especially with the spirit of Suzy's balancing act being relived every day by the folks who walk the Commodore corridors.

And regarding how I feel about the Amiga: hey, you can never tell, I might be just kidding. And now you must excuse me, for I hear the Guru calling and the Guru is only so patient. Later! Control-Amiga-Amiga.

*Autobiographical Note: I spent years learning and gallivanting, then travelled, then did logic, special effects and management stuff for Williams Electronics, the excellent arcade game maker in Chicago. Then I moved to California and co-designed the Amiga, especially the Gels animation system and Intuition, the user interface system.*

**SOUND****ADVICE****by PEGGY HERRINGTON**

## COMMODORE 64 MIDI

If you're into music synthesis, you probably know that MIDI is a set of guidelines designed to provide compatibility between music synthesizers, drum machines, other electronic devices and computers. Since it was proposed as a voluntary standard for instrument makers just three years ago, MIDI (which is an acronym for Musical Instrument Digital Interface) has dramatically altered the way professionals approach music because it automates just about everything except creativity. But did you know it's a boon to amateurs as well?

Unlike a tape recorder, MIDI doesn't record the sound itself. It records the digital instructions that make electronic devices do whatever they are designed for, and those devices along with the computer (if one is used) must be present and connected each time the music is played. Surprisingly enough, there are a number of advantages to this, one being that MIDI systems are modular and in many cases, different brands of instruments can be substituted without the need to alter MIDI instructions, which permits upgrading a system as one's needs (or means) expand. It also means that music can be pre-recorded along with things like stage lighting, saved to disk, and played back later in a recording studio or as part of a live performance. Last but not least, it also means that music education software and musical accompaniments can be used with MIDI music systems.

### NO PRACTICE?!

One of the least-known advantages of MIDI accrues to the aspiring musician as she or he no longer has to spend years developing technical proficiency on an instrument. That's not to say that you'll become an instant Liberace or that there aren't any trade-offs, but the drudgery of repetitive practice that stops so many potential musicians from marching to their own drum beats is practically eliminated with a computer-controlled MIDI system. Sure, some keyboard technique is required, and an understanding of electronics and orchestration can come in

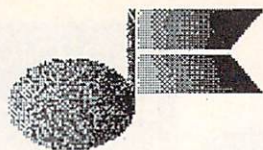
mighty handy, but the process of acquiring those skills is far removed from that most dreaded of all musical squelchers, practice. How many times have you heard someone wish out-loud that they'd stuck with the music lessons their folks tried to foist upon them?

The secret to MIDI and this virtual elimination of practice (at least for the hobby musician) lies in the nature of electronic sound production. Since musical pitch and timbre (any particular type of sound) are made and stored separately, they can be manipulated separately. Music can be recorded (actually MIDI data is stored) in several ways: either by entering symbols on a staff with the joystick, by playing live (very slowly if you want, one voice at a time) on a MIDI-connected keyboard, or in step-time by pressing a key on a synth and then indicating its duration by pressing some other key. With the last two methods, you can record musical parts that you want different instruments to sound (all the way through a piece or by phrase) one after the other. These parts are then added together after the fact and sped up for playback. With an appropriate MIDI set-up, what sounds like a group of different instruments playing together can be orchestrated in this manner -- a jazz band, a rock group or even a symphony orchestra. It's only if you want to perform live with pre-recorded accompaniments that you need any real facility on a keyboard, and even then, it's nothing like playing a piano or organ because synths make fat sounds and you don't need as many.

### MIDI HARDWARE

A MIDI system can be as simple as a C64 or 128 connected to a single multi-timbral synthesizer (see the Amiga music article in this issue for a description of the Casio CZ-101) or, with some limitations, a computer with as many devices -- synthesizers, keyboard samplers, drum machines, mixers, reverb units -- as your budget permits. 5-pin DIN MIDI cables chain devices together and to a C64 or 128 by use of a MIDI interface that plugs into the RS-232 port. MIDI instructions (upon which MIDI software is founded) make it possible to communicate with these devices individually or as a group by using 16 separate channels that carry various types of messages.





## MIDI SOFTWARE

Software is needed with a MIDI system controlled by a computer, and just as word processors differ from each other, so do MIDI composition programs (which, by the way, can be thought of as music processors). Also like word processors, there are two distinct types: those intended for the more serious user which are more elaborate and offer greater control, and those that are geared for casual or hobby use. Either way, there are four kinds of MIDI software: music composition and performance programs, synthesizer patch and librarian programs, music education programs, and programs that collaborate with a dot-matrix printer to produce sheet music. While some are available for the C128, all types are out there for the C64 and they, of course, can be used on the C128 as well in C64 mode. Let's take a look at a few from the first two categories.

### MIDI NOTE EDITORS

As you might guess from the name, note editors let you work with standard music notation. The primary method of entering music with them is to use a joystick to pick up and drag music symbols from a menu to a music staff. While not as sophisticated in detail as music sequencers (and therefore easier to use), note editors can provide hours of enjoyment for amateur musicians in both recording and performance situations.

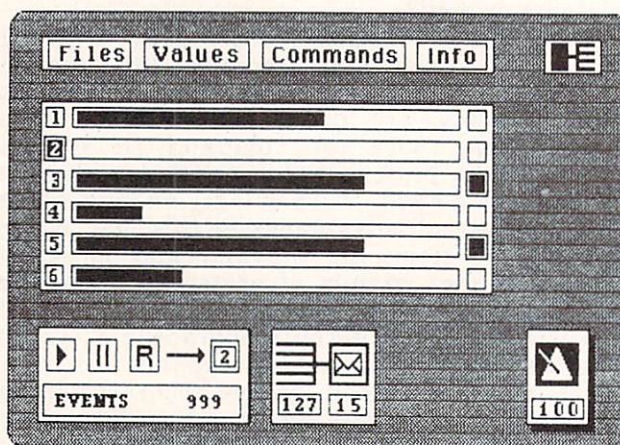
### MUSIC SHOP FOR MIDI

This is one of the nicest little MIDI note editors available for the C64. Screen displays are very well-done with clean notation and changeable colors. Whole to 32nd notes and rests may be entered on a single staff, the grand staff or in 4-parts with treble or bass clef on any staff. Music is entered either with the joystick or in step-time from a MIDI-connected synth keyboard. Eight voices are available and they can be transmitted over four MIDI channels with presets (sound location numbers) assigned to each. Music can be synced to a drum machine in 24 or 48 PPQN, using optional bar lines and 1st and 2nd repeats, and lots of music files are included on the disk. Tempo is fixed throughout a song but key signatures are alterable. Simple editing features include capture, cut, copy, paste and clear, and there's even a utility for printing

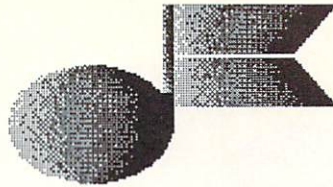
sheet music. The Music Shop (\$99.95) was one of the first C64 programs to incorporate pull-down menus, windows and dialog boxes. It's available from Passport Designs, 625 Miramontes St, Half Moon Bay CA 94019, 415/726-0280

### MUSIC SYSTEM

The Music System by Firebird (\$39.95) for the C64, is a SID note editor. It is menu-driven and consists of two modules, one with which you can enter notes one at a time or record 3-part music in real-time from the C64 keyboard, and the other which is a very powerful design and modification section for SID-produced sounds. With it comes an offer to upgrade to The Advanced Music System

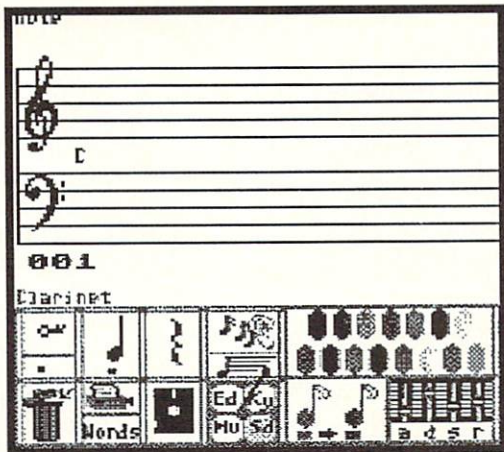


(AMS, another \$40) and the instruction manual for both programs. AMS lets you record tracks by playing on a MIDI-connected keyboard (with a S.I.E.L. or Passport interface) in up to six voices, setting the MIDI output channel on the keyboard to the one you want it to be played back on. Also included are program modules for editing music notation, a linker to chain files together (which is a must), and a routine that prints music with each voice on a separate staff. Files created with the introductory program are compatible. Icons, pull-down menus, windows and input boxes make this an attractive, easy to use music composition program and I recommend it to people interested in SID-made music as well as MIDI. Contact Firebird Inc., at 71 North Franklin Turnpike, Waldwick NJ 07463, 201/444-5700



## MUSIC STUDIO

Beautifully coordinated colors are used to indicate notes played by different instruments using the SID chip in Music Studio (\$34.95), which has been billed more as a C64-internal music composition program than MIDI. While not well-documented, it does have a limited MIDI-implementation; MIDI data is sent over channel 1 and presets set manually on the



synth itself, which means that everything will play with one instrument sound. It offers a music printing option and performs with Passport and compatible MIDI interfaces. Music Studio can provide a good introduction to music notation and is a viable transition to MIDI, especially if you already have it. Activision, 2350 Bayshore Frontage Rd., Mtn View CA 94043 415/960-0410

## MIDI MUSIC SEQUENCERS

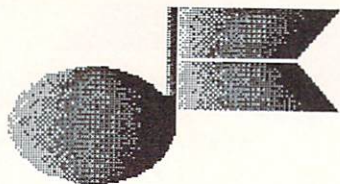
Generally, MIDI sequencers are for the more serious musician. They do not use standard music notation for a couple of reasons. Not everyone reads it, MIDI data is numeric, and complex screen displays can interfere with the accuracy of musical timing in playback. Realize that sooner or later, you'll end up working with numbers with a sequencer.

## DR.T'S SEQUENCER

If functionality without any funny-business sounds good to you, take a couple of synthesizers and call Dr.T in the morning. His C64 Keyboard Controlled Sequencer (Version 2, \$150) lives up to the promise of MIDI and offers three ways to enter sequences, by playing notes or chords in real- or step-time from MIDI-connected synths or by typing data from the computer keyboard. Once entered, you're privy to straight-forward displays of MIDI events (to a maximum of 3550, or 35 sequences, which represent your music) that can easily and individually be altered with the 64's full-screen editor. Sequences may be copied or moved in all or part, transposed, auto-corrected, overdubbed and merged; they can be played backwards, or inverted in pitch, duration or velocity. Control sequences are used to combine sequences into songs in a variety of ways with examples provided on disk and in the documentation (which is very detailed and full of good musical ideas). MIDI mode changes can be inserted in song files and things like vamping and echo effects produced quite easily, once you get the hang of it.

Dr.T offers 100% trade-in allowance for C64 program owners to upgrade to his C128 Keyboard Controlled Sequencer (\$225.00). It can read files saved by the C64 version and store 128 sequences and almost 12,000 notes. While the 64 version was recognized as one of the most professional MIDI sequencers available for that model, the 128 version offers all of its power and more. Among other things, you can hear the music and see the edit screen concurrently, rescale dynamic ranges, add randomness with permutations and transpositions, and sync to any device that reads SMPTE and sends MIDI song-pointer and clock data.

Dr.T's sequencers are compatible with Passport and Sequential Model 64 MIDI interfaces as well Dr.T's own Model-T (\$90). Patch librarian programs (see below), and disks of music (\$30 each) that work with either sequencer are also available. Dr.Keys provides prerecorded sequences in styles like blues, rock & roll, and Latin rhythms that you can use in songs or play along with live; the Bach Songbook features 20 of J.S.'s masterpieces. Contact Dr.T at 66 Louise Rd., Chestnut Hill MA 02167, 617/244-6954



## SONUS' SUPER SEQUENCER

This newcomer, the C128 Super Sequencer (\$275.95) from SONUS, is a powerful yet attractive, easy to use program that offers two modes of operation, sequence or song. Menus at the bottom of the screen show the 16 commands available in sequence mode, for instance, which are accessed by pressing the function keys normally, shifted, with the control key, or with shift/control. Music can be recorded in real- or step-time at 24, 48 or 96 pulses per quarter note (PPQN) and played back in any. Multiple clock selections include click out, MIDI drum in and out, and tape click in and out, provided they are supported by your Passport, Sequential or Syntech MIDI interface.

Mid-screen displays simulate tape recorder counters for record and playback, including fast-forward and reverse, live mute/unmute and punch. After recording, you can set the beginning or end of a sequence (to chop off unwanted material), and it can be named, transposed or the tempo altered, appended, erased or shifted to create a rest at the beginning. Sequences may be arranged in up to four separate songs (called a set) of up to 24 elements each, all resident in C128 memory. Mod-wheel and velocity sensitivity are supported and data for both can be stripped to free memory. The C128 version has a built-in system-exclusive librarian for saving synthesizer program information (sounds) to disk, and numerous other features for detailed control of musical input and MIDI data editing.

I haven't used the C64 Super Sequencer (\$225.95) but fewer features are offered due to less available memory. SONUS has a sophisticated line of MIDI products for Commodore musicians including Yamaha DX and Casio CZ sound disks and librarians (see below for Casio), event editors and MIDI interfaces. Their newest release is MidiTech 64 (\$99.95), an elaborate MIDI system-exclusive librarian and diagnostics program. Contact them at 21430 Strathem, Suite H, Canoga Park CA 91304, 818/702-0992.

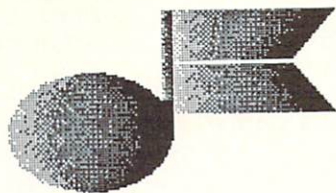
## SYNTECH MIDI STUDIO

Functionally and visually (except for screen colors), Syntech's C64 MIDI Studio appears to me identical to the SONUS sequencer, and rumor has it that some of the principals left Syntech earlier this year to form a new company.

As you read this, remember that this program works in C64-mode while the SONUS sequencer discussed above operates in C128-mode with twice the memory. Because of that, MIDI Studio loses features rather than functionality. Missing are the system-exclusive librarian, mod-wheel and velocity or after-touch tracking, several editing features including transpose and shift, and tape sync. It will accomodate one song of 12 sections in memory and it looks to be a nice alternative for MIDI novices as it retails for \$79.95. Since I don't have the Sonus C64 sequencer I can't compare them. Syntech Corporation, 5699 Kana Road, Agoura CA 91301, 818/704-8509, offers other Commodore MIDI software, Casio CZ and Yamaha DX librarians and sounds (on disk or RAM cartridge), MIDI interfaces and Thru boxes.

## PASSPORT DESIGNS MIDI

The difference between these two programs is whether you want to make 4 or 8 channel (voice) music. MIDI/4 plus retails for \$99.95, MIDI/8 for \$149.95 (and MIDI/4 owners can upgrade for \$35). Both are superbly organized and documented sequencing programs that offer real- or step-time recording down to 32nd note triplets with punch in and out editing, overdubs and controller sensing of key velocity, pitch bend, preset changes, aftertouch and modulation. A single-step playback features lets you edit each beat in 24 increments. Like Passport's MIDI interface, these programs are becoming recognized as standards in the music industry. For information on their extensive C64 MIDI products (which include music education software), contact Passport Designs, Inc., 625 Miramontes St. Suite 103, Half Moon Bay CA 94019, 415/726-0280.



## SYNTHESIZER LIBRARIANS

Some music synthesizers come equipped with sounds the others would kill for (Yamaha's DX-7 for example). But even the greatest sounds can wear thin and free-standing MIDI librarian programs provide a means of creating and/or transferring new sounds (also called patches or programs) into synth memory where they remain even when powered-off, thanks to back-up battery systems.

Most synthesizers are programmable and it's a good thing, because factory sounds in the Casio CZ-101, for instance, are relatively flat and uninteresting. But designing and programming rich, interesting sounds is a tedious, frustrating process which is why many MIDI musicians purchase -- rather than program -- alternate sounds from companies like these.

### DR.T'S CZ PATCH LIBRARIAN V2

Like his music sequencers, Dr.T's CZ Patch Librarian (for C64, \$100) offers utility over flash. The librarian holds three groups of 16 sounds in computer memory, placed there either from the CZ or disk, and lets you rearrange and swap them collectively or individually, sending them to the CZ's internal memory and RAM cartridge if you have one. While not especially easy to use, the patch editing program lets you see and change each and every numerical parameter of a CZ sound, and play sequences composed with Dr.T's MIDI sequencer to test them out. 14 files of 16 patches each come on the program disk, giving you a tidy 224 new sounds to play with. Contact information shown above.

### SONUS CASIO LIBRARIAN

The new SONUS C64 Casio Librarian and patch editor (\$129.95) operates in a manner similar to their sequencers, using onscreen menus for function key commands. With this information always present, it's easier initially and for the occasional user to move and swap the sounds stored in banks, but the trade-off is that only two banks of 16 sounds each can be put into computer memory at one time. 10 files of 16 new sounds each (160 total) are

provided on the program disk, and again, with the patch editor onscreen help and less in general to have to remember, I found it easy to use, too. SONUS offers a C64 DX21, 100, 27, TX7 Support librarian (\$139.95) and other MIDI products. Contact them at the address shown above.

## MIDIMOUSE COLLECTIONS

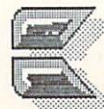
MIDImouse sound collections include luscious strings, hard hitting basses and percussive and alien-type effects that can put some real life into your music. Sounds on their Casio CZ C64 disk-based collections (4 volumes of 40 sounds, \$19.95 each) must be installed with another company's librarian utility, compatible programs including Dr.T's, CZ Rider, Passport, Triangle Audio and M.S.S. Sounds are also available on RAM cartridge (64 sounds for \$69.96, 128 for \$124.95), or on paper Data Sheets (\$19.95 for 40, multiple discounts available). They have collections for Yamaha and other synths, too. To get an idea of what they're like, order a demo audio cassette tape (\$4). MIDImouse Music, Box 272, Rhododendron OR 97049, 503/622-5451.

## QRS MIDI DISKS

QRS makes pre-recorded music disks from their 10,000+ piano roll library, a collection that includes Show, Country & Western, Pop, Rock, Disco, Classical, Religious, Marches and Grammy Winners. Each 6-song C64 disk retails for \$19.95. They also offer a C64 MIDI-interface (it's only MIDI-out, you can't use it with composition software) together with six sample song disks of classical and contemporary hits including Rhapsody In Blue as played by the author George Gershwin (\$49.95). These very-listenable products are available from Micro-W Distributing, Inc. 1342B Route 23, Butler NJ 07405, 201/838-9027.

## CODA

Remember that a MIDI system consists of a program running on a computer that's controlling externally-connected synthesizers, drum machine or other devices. Choose the software carefully, going for as much control as you can handle.





Remember, folks, these are *RUMORS*, and that means that they may or may not be true. Don't bother getting mad at us about them; we don't make them up, we just report them.

--> We have heard that the 64C is proving so popular that it is deeply backordered even though Commodore is running the 64C production lines on *two shifts*.

--> All of those rumors about the *imminent death of the C128* may have *some* basis in fact. We have heard that the C128 will be "de-emphasized" to free up production lines for the 64C and to free working capital needed to import Commodore's IBM/PC clones.

--> The latest word online is that the last C128 will roll off the lines in December of 1987.

--> We also hear that the Z80 chip may be the only thing missing from an *enhanced C64* that will offer faster operating speed. It will have additional memory, but will apparently access it like the 1764 RAM expander, rather than as contiguous memory like the C128 does. Whether it will have 80-column capability or a numeric keypad is anyone's guess.

--> The latest rumor from the West Coast concerning the *new, improved Amiga* says it will be called the model 2500, will have *2 megs of chip RAM* and new graphics and sound chips that can address two megs, and will have a new ZORRO architecture that is *IBM/PC card-compatible*.

--> On the other hand, the latest rumor from the East Coast says the *new, improved Amiga* will have 7 slots, 3 Amiga-compatible and 4 IBM-compatible. The Sidecar will be built in, it will have one and maybe two megs of RAM, and cards will be available to upgrade internally to a 68020 or 68030 as well as allowing the addition of an IBM/PC-AT clone-on-a-card.

--> The *new reduced-cost Amiga* may come bundled with the famed Commodore 64 emulation software. The cost will be about \$495 and it will have version 1.2 of the operating system in ROM, but no word yet on whether the price includes a drive.

--> We keep hearing that Sony has a box/monitor that displays interlace video (as in the Amiga's 640x400 mode) as non-interlaced, thus removing the flicker.

--> Another Sony rumor says that their latest full-blown Beta video recorder (the SL-1000) will have stop-frame animation capabilities, a must feature for Amiga video artists.

## TRUE FACTS

The title you just read indicates that the following information is stuff you can bank on, things that we know for certain to be true. Just wanted to make that clear.

--> From what we hear inside at Commodore, even *they* haven't decided yet what will or won't be included in the new Amiga models.

--> At least some (and maybe most) of the engineering work on the new Amiga models is being done not in Los Gatos, but in Commodore's West German plant, where the Sidecar was developed..

--> *Ashton-Tate* was *not* showing Amiga product at the Comdex show, but they did seem to be *very* interested in what everyone else was showing for Amy. Hmmmmmm....

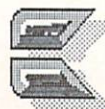
--> The *Apple IIGS* is in *very* short supply and will probably ship less than 10,000 units this year. The problem involves production delays and bugs in the IIGS's special chips.

--> One of the original members of the Amiga Development Team says that one possible project that was discussed early on and then shelved was an *Amiga-on-a-card* which would plug into an IBM/PC system. Though it was agreed that such a card is possible, it will *never* see the light of day.

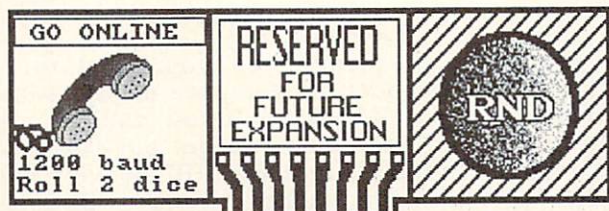
--> How good is Commodore's PC-10 IBM/PC clone? Well, ComputerLand of Canada has named it their *official PC clone*. Our contacts there say it is selling like the proverbial hotcakes.

--> We hear that an Amiga hopped up with 8 megabytes of RAM, a 68020 cpu chip, and a 15mHz clock actually ran for about five minutes at the Amiga Developers Conference. With that kind of turbocharging stretching the Amiga's chips well beyond their designated specifications, no one reasonably expected it to be able to run at all.

--> It seems that IBM has finally built itself up to a level of retail success comparable to that achieved by Commodore when they first introduced the PET computer almost a decade ago. Robert Crowell, chairman of the four-store Neeco computer store chain, quoted in *Computer and Software News*, says: "Demand for IBM's AT 339 is higher than demand for any product I've ever seen since the Commodore PET in 1978-79."



# INFO mania



## INFO MANIA: THE GAME

We know most of you are INFO Maniacs already; you just can't wait for the next issue of INFO! Now to keep you occupied between issues, through those long winter months and even longer 1541 load times, INFO proudly presents: **INFO Mania: The Board Game!**

The object of INFO Mania is to accumulate the most INFO star rating points by the time the last INFO card is drawn. Along the way you'll have problems with your system, learn some things about computing, and, we hope, have a lot of fun.

## PUTTING IT ALL TOGETHER

If you want your INFO Mania board game to last a long time, we suggest you encase it in plastic before you cut it out. Remove the board from the center of the magazine and carefully press down a layer of self-adhesive clear plastic Contact paper on each side of the board. (This can be a *very tricky* process and it's very easy to ruin the board, so be careful!) Then cut out the cards on either side of the board itself. There are also some game markers that you will need to cut out, fold, and assemble, as the illustration shows. (You will probably have to assemble these *before* you cover the rest with plastic.) We couldn't figure out how to bind a pair of dice into the centerfold, so you'll have to provide those yourself. If you don't have any dice, this short program written in C64/C128 BASIC will generate dice rolls for you on either machine:

```
10 PRINT "INFO MANIA DICE": PRINT
20 N=2: INPUT "ROLL HOW MANY DICE
  (RETURN FOR 2, 0 TO END)";N
30 IF N=0 THEN END
40 T=0: FOR X=1 TO N
50 R=INT(6*RND(0)+1)
60 PRINT "ROLL IS:" R
70 T=T+R: NEXT X
80 PRINT "TOTAL IS:"T: PRINT
90 GOTO 20
```

## THE RULES

(1) Everybody picks a marker and places it on the RETURN space. If you want, you can use plastic pawns or the metal dog, top hat, and wheelbarrow markers from Monopoly instead. Deal out two INFO cards to each player. Deal out more if you want to play a shorter game.

(2) Pick who goes first. This is generally whoever owns the game, since he can always get mad and go home if he can't go first. Play advances to the left.

(3) Every turn starts with a roll of two dice. Move counterclockwise around the board, then do whatever it says to do on the space you land on. If you roll doubles, you get an extra turn.

(4) **Landing on somebody else:** If you land on a space occupied by somebody else, you can be a nice guy and not do anything to him, or be nasty and roll one die and do what it tells you to, according to this table:

- 1 You take an INFO card from him.
- 2 He picks and gives you one of his INFO cards.
- 3 You pick and return one of his INFO cards to the board.
- 4 He takes TWO INFO cards from you. (Greedy!)
- 5 You pick one INFO card from each other. (And show what you trade!)
- 6 He is Held by the FBI.

Anytime you pick a card from another player, it should be by random draw. If more than one player occupies the space you land on, you can decide independently what to do to each of them. Whatever you decide to do, do it before you take the action indicated by the space itself.

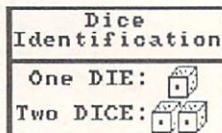
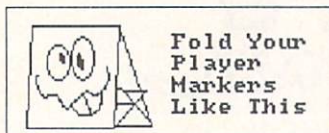
(5) The game is over when the last INFO card is drawn. The winner is the one with the highest total number of *stars*. In the event of a tie, the high-scoring player with the most cards wins.

## THE SPACES

(6) **DRAW INFO:** When you land on one of the three DRAW INFO spaces (All Nighter, Upgrade System, or Learn Language) you draw an INFO card. You also draw one every time you *pass* the RETURN space where you started.

(7) **RND:** When you land on a RND space, pick a RND/ONLINE card. Follow the instructions on the unshaded (RANDOM) portion of the card. (The shaded portion contains instructions for the ONLINE section of the game.) Usually the result of drawing a RND card will be LOSE CARD TO LEFT, in which case the player to your left will draw an INFO card from you at random, RETURN INFO CARD, which causes you to return a card of your choice to the bottom of the INFO stack, or TAKE PLAYER'S CARD, which lets you pick an INFO card at random from any

# INFO mania



other player of your choice. Any other cards should be self-explanatory. Return the RND/ONLINE card to the bottom of the pile.

(8) **GO ONLINE:** When you land on a GO ONLINE space, you immediately move your marker to the GO ONLINE space of the ONLINE section of the gameboard and draw an ONLINE card. Whenever you land on a space in the ONLINE section, you pick a RND/ONLINE card and follow the instructions on the shaded ONLINE portion of the card, then return the card to the bottom of the stack. On subsequent turns you will roll either one die (if you went ONLINE via the "300 baud" space) or two dice (if you went ONLINE via the "1200 baud" space). In any event, when you reenter the main gameboard you will go back to using two dice.

(9) **GOSUB:** If you land on the GOSUB space, on your next turn you will move up into the Subroutine Loop. You move just like you do normally, but you'll notice that every space in the Subroutine is a RND space, which can make things pretty interesting. The **SYSTEM CRASH** space is the one space on the board you want to avoid at all costs, since landing on it will cause you to return *all* your INFO cards to the board.

(10) **BONUS SCORE** and **CODE CRACKER:** These spaces can give you extra INFO rating cards depending on how you toss the dice. Roll two dice. If the total is odd, you get to draw an INFO card. If even, you blew it.

(11) **INTERRUPT REQUEST:** As you pass the Interrupt Request space, you must make note of whether the dice roll you made for your move was even or odd. If even, you continue on with your turn. If odd, your move is interrupted and you have to stop and end your turn. This will keep you from zooming past RETURN and grabbing an INFO card on about 50% of your moves. If you "forget" to check for an Interrupt Request as you pass by and nobody has called you on it by the time the next person rolls the dice, congratulations! You have just gotten by with cheating.

(12) **HELD BY THE FBI:** Only really good (and really irresponsible!) hackers get held by the FBI. There is an "Informant" card in the RND/ONLINE cards that you can keep and hold to get out of this space. Otherwise you will have to roll doubles to get out, or return an INFO card to the stack to get out. You try for doubles first, then return an INFO card to get out if that doesn't work. You then move whatever you rolled. You can elect to stay put

if you don't roll doubles on your first turn, but on your second turn you *have to* return an INFO to get out if you don't roll doubles. If you have no INFO cards you get out for free on your second try, since the FBI decides you can't be much of a hacker anyway. Doubles used to get out of FBI do *not* also count towards letting you take an extra turn.

(13) **LOSE A TURN** and **EXTRA TURN** spaces are pretty self-explanatory. If you are on a Lose A Turn space and you "forget" to skip your turn when it comes around, the "cheating" rule mentioned in #11 applies.

(14) **GOTO SPACES** move you somewhere else on the board. Just do whatever the space you move to requires. You do *not* pass RETURN when you GOTO, so you don't get to pick an INFO card for passing RETURN.

(15) **GO TO BED** If you land on this space you have to go to bed. Roll one die to see what time you go to bed (from 1 to 6 a.m.) If it's before 3 a.m., you are not much of a computerist and must return an INFO card to the board. But if you are a Super Hacker and stay up all night until 6 a.m., you get to draw an INFO card. (Return a card on 1 or 2, draw one on 6.)

(16) **READ LATEST INFO** When you land on this space, you draw a bonus INFO card.

(17) **OTHER SPACES** There are other spaces that do nothing related to gameplay, and just describe something you can do with your computer while you wait for your next turn.

(18) **RESERVED FOR FUTURE EXPANSION** does nothing....for now!

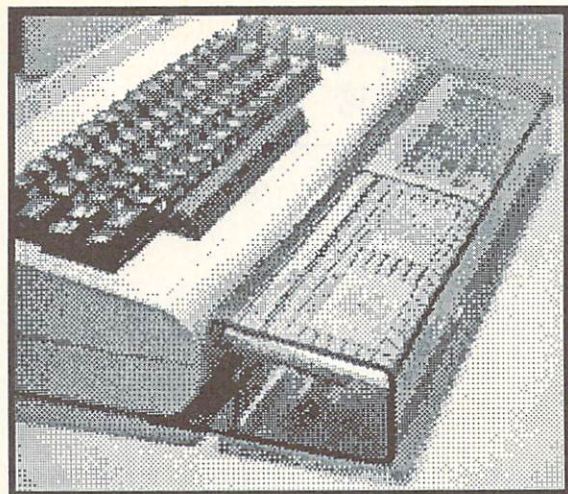
## HAVE FUN!

If you run into something that isn't covered in the rules, work it out among yourselves. Develop your social skills. Heaven knows, if you're a dedicated computerist, you need the practice!

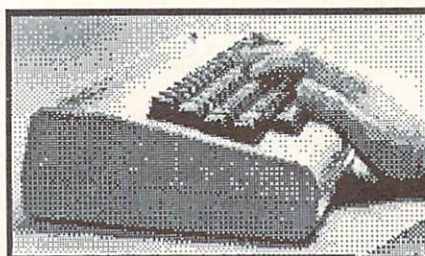
That's all there is to it! We hope you have lots of fun playing **INFO Mania**. We'd appreciate your feedback on the game, and whether or not you'd like to see us bring you more "fun stuff" like it. Send your comments to:

INFO Mania  
PO Box 2300  
Iowa City IA 52244

or send us EMail at our online addresses listed in the Reader Mail section.

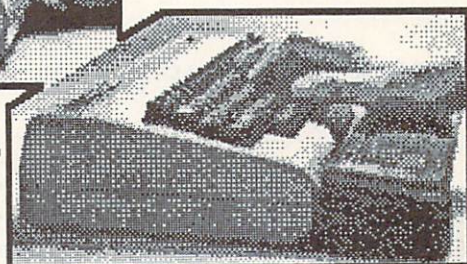


# the INFO ERG=BOARD™



← THE PROBLEM  
(OUCH!!)

THE SOLUTION  
(AHHH!!)

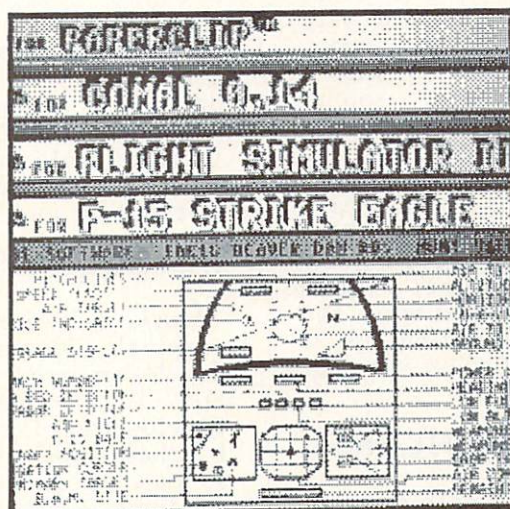


- \*ENDS WRIST FATIGUE!
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DOODLE  
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EASY SCRIPT  
PAPERCLIP (A)  
PAPERCLIP (B)  
COMAL 0.14  
FLIGHT SIMULATOR II  
F-15 STRIKE EAGLE



### CARD SET 2

COMPUERVE GUIDE  
SPEEDSCRIPT 3.0  
8510 PROWRITER CODES  
CP/M PLUS  
BASIC 7.0 (A)  
BASIC 7.0 (B)  
INFOCOM ADVENTURES  
ULTIMA III  
COMMODORE DOS  
AMIGADOS  
ELITE  
VIZAWRITE

**OK!**

PLEASE SEND ME

- |                          |                |              |
|--------------------------|----------------|--------------|
| <input type="checkbox"/> | ERG=BOARDS     | @ \$17.95 ea |
| <input type="checkbox"/> | CARD-SETS (#1) | @ \$5.95 ea  |
| <input type="checkbox"/> | CARD-SETS (#2) | @ \$5.95 ea  |

ALLOW 3-7  
WEEKS FOR  
DELIVERY.

NAME \_\_\_\_\_

TOTAL \_\_\_\_\_

ADDRESS \_\_\_\_\_

SEND CHECK OR M.O. TO:

City/ST/ZIP \_\_\_\_\_

INFO  
PO BOX 2300  
Iowa City, IA 52244

# Amiga Music: The State Of The Art

by Peggy Herrington

## STRIKE UP THE BAND--

Making music on a traditional instrument requires a major investment to develop one's chops or manual dexterity. You can do that on an electronic instrument, too, if you insist, but the real advantage of a newfangled music-maker is that you don't have to practice forever to get musical satisfaction.

Making music on the Amiga is especially easy because it's a powerful computer coupled with a flexible, high-quality musical instrument. Thanks to computer memory and software, making music is a two-step process, with time on your side for a change. For most of it, you'll work one step away from the final outcome, entering notes at your leisure with the mouse or slowly playing them into memory on an attached piano-type keyboard. This is possible because unlike acoustic sound, electronic sound is produced in two distinct parts, pitch being one, and timbre or the nature of the sound being the other, so that changing one doesn't alter its counterpart. Electronic music can be played faster without altering the pitch, and parts that were entered separately can be played back together without any loss of quality. Once you've entered the notes, the instruments playing various parts can be swapped until you're satisfied with the arrangement.

## NOTE EDITORS & SEQUENCERS

Although standard music notation isn't capable of reflecting much that electronic music-makers can do, it is used in computer music programs because nobody has come up with an acceptable alternative. These programs are commonly, but not always, called note editors. This capability means that after you've entered the music, the program provides a means of altering pitch and duration, and moving or copying notes alone or in groups, and a good note editor can save you a lot of work. All of the programs described here have note editors, though one of them, ProMIDI Studio, uses numbers instead of standard music notation. Note editors also incorporate some of the functions from what was the original software music manipulator, the sequencer.

A sequencer lets you do much more than copy or paste and add first and second endings, which are the features most commonly borrowed by note editors. It saves groups of notes in separate sections and lets you set them up to play in unlimited combinations, AABA or ABABC, for example. A sequencer doesn't use much computer memory because rather than actually rewriting sections in the proper order, internal pointers are used to indicate which part gets played when. Complex scoring can be arranged with a sequencer, as musicians familiar with the fugue will appreciate immediately. I don't know how true it is, but a college professor of mine claimed that J.S. Bach --the master of the fugue-- had written more music than the average person today could copy by hand, working eight hours a day, five days a week during his entire working life. It boggles the mind to think what he could have done with ProMIDI Studio, the only program mentioned here that has both a sequencer and note editor.

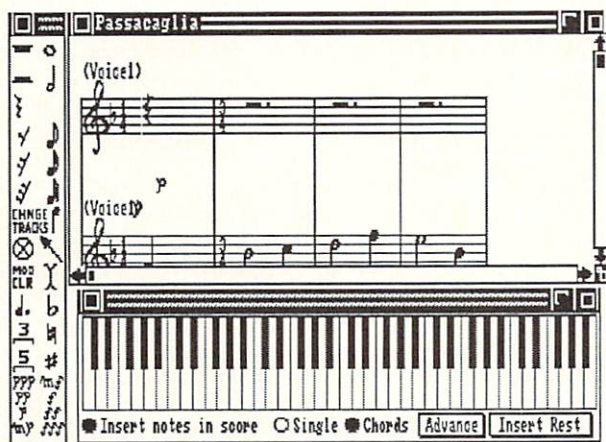
## IFF COMPATIBILITY

Music software is available on all kinds of personal computers, but Amiga program developers are working on something that's a first in the industry. Graphics and music developers are trying to put the data produced by their programs into a standardized format so that it can be used with their competitor's products. It's called the Interchange File Format (IFF for short) and so far the graphics artists are ahead of the musicians which is, interestingly enough, the way it's been down through the ages. (Digital sampler makers are in on the act, too, see Info #13 for details.) It should be worth the wait because once the rough edges and transitions are smoothed out (and actually, there aren't that many left), Amiga musicians will be able to enter a composition with the program of their choice, edit and arrange it with another they think better suited, print out sheet music with a third, and synchronize video images to it with a fourth.

Here are the programs which promise that power.

## DELUXE MUSIC

One of the most heralded programs for the Amiga, **Deluxe Music** will be available in some stores for the '86 holiday season, according to Geoff Brown, its designed and programmer. I received a Beta 4 test version in early November which was functional except (alas!) for the routine that prints sheet music, and at press time, it was debatable whether a laser print routine would be included or print output would all go through Preferences. Laser print quality (with 300 dots per inch as opposed to 72 on a dot matrix) is vitally important to serious musicians, many of whom have been anxiously awaiting **Deluxe Music** since it has been billed as a professional quality desktop music publishing system.



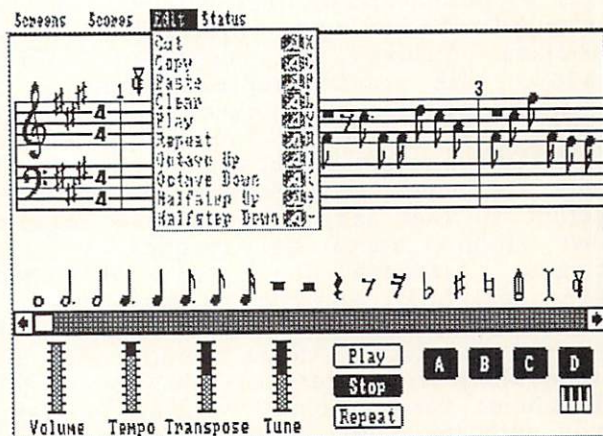
But that's not all it is. **Deluxe Music** is IFF compatible and plays sampled sounds. It has a full MIDI implementation, and offers the most accurate standard music notation display and editing features I've ever seen. In addition to those offered by most music programs, **Deluxe Music** notation can be entered in triplets or fives, stems can be directed up or down at will, and groups can be barred or slurred. Music can be entered three ways: (1) with the mouse by dragging symbols from a palette on the left border of the screen, (2) by placing the pointer on a piano-type onscreen keyboard, entering single notes or chords and using the function keys to change durations, and (3) by playing on a MIDI-connected music synthesizer. Parts can be entered on separate tracks using a variety of clefs, and instrumentation can be changed for any voice at bar lines. Lyrics and music

symbols that the Amiga will ignore during play (e.g. guitar tablature) can be placed precisely on the printed copy.

After music is entered, it can be manipulated in a variety of ways. Groups of notes can be cut, copied, pasted or transposed, their durations halved or doubled, their stems flipped, and their amplitude (loudness) altered from **ppp** to **FFF**. Amiga internal sounds can be mixed with MIDIed synthesizer voices in 36-note chords (four from the Amiga, 32 from synths). I could go on but in short, **Deluxe Music** is a flexible, detailed composition program. It has the promise of providing a much needed utility for printing professional quality sheet music, and is available for \$99 from Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404, 415/571-7171.

## SONIX

If **SONIX** looks familiar, that's because it's **Muscraft**, slightly revised. Aegis has added MIDI-out to it and rewritten the already lengthy documentation. They bought the rights to it from Commodore, who, long before the Amiga was available, commissioned a company called Everywhere to write it. And with that many people involved, early copies of **Muscraft** slipped through the cracks. I've seen four versions, and it has spread so widely that there are public domain **Muscraft** songs on the commercial networks.



**Musicraft** has three screens: mouse music entry in standard notation that scrolls during play, a map of the keys you can play on the Amiga keyboard, and a synthesizer screen where instruments (previously sampled or constructed sounds) can be designed or altered. The last version (1.0) saves files in IFF-SMUS format. **SONIX** was demonstrated at a trade show in September. Aegis had added another screen for MIDI-out, and changed the A,B,C and D voice indicators on the composition screen to include E,F,G and H to reflect them. I don't know if it will mix Amiga sounds with those from synthesizers but I know for a fact that it won't record music played on a MIDI-connected synth.

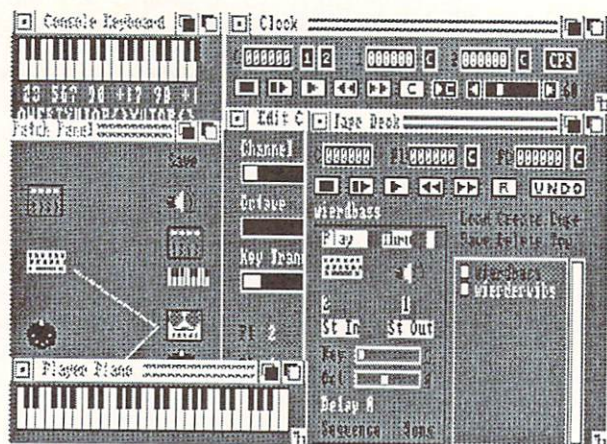
Many of the editing features were ghosted in **Musicraft**. Among them were cut, copy and paste and their absence made music entry tedious. Availability of these and others should make **SONIX** super easy to use. But its limited MIDI implementation, and lack of notation details (like redirecting stems and barring notes) coupled with the absence of a print utility, don't bode well considering that **SONIX** is functionally quite comparable to **Deluxe Music**. **SONIX** will be available in some markets for Christmas (yes, that's 1986) but the price hadn't been determined at press time. Contact Aegis Development, 2210 Wilshire Blvd., Santa Monica, CA, 213/306-0735, for more information.

## SOUNDScape PROMIDI STUDIO

**ProMIDI Studio** is the main module in a series of SoundScape products Mimetics will be releasing for beginning and professional Amiga musicians. Visually, it consists of several windows with graphic representations of a multitrack tape deck, a couple of digital clocks, piano-type keyboards for the Amiga console and MIDI-connected synthesizers, and a Patch Panel for connecting SoundScape modules together so that they can exchange signals. Other windows appear as you click on these displays. Although it is a full-fledged professional MIDI software package that lets you record, edit, mix and mingle sequences of internally produced Amiga sounds with or without those from external synthesizers, it is a fine choice for musicians wanting to make music with the Amiga alone, because with it you can expand gracefully into MIDI later.

If you've never seen professional MIDI software before, you may be overwhelmed by **ProMIDI Studio** at first, partly because there's

so much going on and partly because it all seems so foreign. But if you're serious about getting into electronic music, buy it and hang in there; I've talked with many users who were intimidated initially but by their second or third session were extolling its virtues. Those who can read music may bemoan the absence of standard music notation, but building graphics screens does slow a program down, and professionals say it's limiting anyway. (That's also why many of them are anxious to have **Deluxe Music** produce sheet music on a laser printer.)



New SoundScape sampling software that takes advantage of the stereo capability of the Amiga and has improved editing features is now being shipped with the sampler (\$99) and is available free to registered owners. And a version of **ProMIDI Studio** with SYMPTE will be available by the time you read this, which should be good news to music video producers.

Doing justice to a program of **ProMIDI Studio**'s calibre in a few hundred words is not something I care to attempt in detail. If you do go for it, be sure to send in your registration card (it's already on version 1.12 now) as a newsletter is in the works, along with free program upgrades and a manual for registered developers. **ProMIDI Studio** is available for \$149 from Mimetics Corp., PO Box 561, Palo Alto, CA 94306, 408/741-0117.)

## MUSIC STUDIO

This was the first music product out for the Amiga and it appears to have been designed for the Atari ST and converted in a rush. Although a couple of fixes that take advantage of the Amiga are available (one in the public domain that converts .song files to IFF-SMUS format and vice versa, the other as an upgrade from Activision for using sampled sounds), as it exists straight out of the box, **Music Studio** is neither IFF nor sample-compatible, although it hopefully will be in future releases. No fixes are available for its other shortcomings, however, which include unchangeable key and tempo throughout a composition. Both can be

continued on page 62



## FUN WITH PC PURSUIT

by Peggy Herrington

You can expand your computing and social horizons into The Big Time with a modem and a terminal program. This equipment connects your computer to a telephone, and that's your means of participating in The Information Age. It enables you to log onto electronic Bulletin Board Systems (BBSs) and commercial networks, and connect your computer to others one-to-one. While I agree that that label for our society's stage of development -- The Information Age -- is accurate enough, I find the term itself so dry and non-descriptive that I think you'll be astounded if you take my advice and give telecommunicating a try. You'll discover a world of ideas and fellowship that you never dreamt existed. Nothing worthwhile is free, of course, and if you want to ride the commercial network wires often you'll need a fair piece of disposable income. But unlike the networks, BBSs rarely charge access fees. BBSs owners, or SYStem OPERators (SYSOPs), devote unbelievable time and energy to the maintenance of their boards in a true labor of love, and some of them are real gems. Until about a year ago, however, we were all faced with long distance telephone charges to reach boards outside our local calling area, and despite the fact that most major population centers have hundreds of boards that are available for free, there wasn't a great deal of intercity communication. That is not the situation anymore because PC Pursuit, a service of GTE Telenet, has dramatically lowered the cost of long distance communication by computer.

## NO LONG DISTANCE

Telenet is a packet-switching service that provides telephone links from smaller cities into bigger ones across the United States. Telenet lines carry digitized data rather than voice signals, and most American cities have local access nodes; there are something like 18,000 of them now. These nodes are nothing more or less than local telephone numbers that allow computer users across the country to exchange information with other computers in

14 major metropolitan areas without incurring long distance telephone charges. The metropolitan centers you can presently call into are:

Atlanta	Denver	Newark	Seattle
Boston	Detroit	New York	Washington DC
Chicago	Houston	Philadelphia	
Dallas	Los Angeles	San Francisco	

Eleven more major markets are scheduled to be added to Telenet's list before the end of 1986. They wouldn't tell me which ones by name, although they pretty much go by the greatest population. But once these cities are online, that will mean a total of 25 that PC Pursuit members can access, or call into, from all over the country.

## \$25 A MONTH

Telenet was initially established as a service for professionals and during business times they charge up to \$14 an hour to use their data lines. But about a year ago, Telenet decided to make these lines available at a much reduced cost during non-business hours (6PM to 7AM weekdays and 24 hours a day on weekends and holidays), and they introduced PC Pursuit for that express purpose.

For a flat \$25 a month, PC Pursuit subscribers can make unlimited calls with their computers into these 14 (soon to be 25) major markets during non-business hours. No strings.

And no long distance charges unless you live in the boondocks and must call into a nearby city with a Telenet access number. For \$25 a month, PC Pursuit members can connect with any computer that will answer the phone in any of these cities for as long as they wish (well, on weekdays until 7AM at the end that initiated the call). There's no limit to the number of calls or the amount of connect or online time used.

I know lots of people who could save themselves a bundle with PC Pursuit. First off, there's my friend who likes to call bulletin boards on Sunday afternoons, read the messages that were posted since the week before and download public domain programs for his user group's library -- a worthy cause, of course, but since he prefers boards in other (larger) cities, these Sunday outings cost him a couple of hundred bucks a month, and his wife, shall we say, is anything but pleased. A



family I know that moved here to Albuquerque from Philadelphia not long ago, longs to make more phone calls back home than they can justify. Since they and many of their friends own personal computers, PC Pursuit would let them and their teenagers communicate with family and old friends there without guilt or big phone bills. And I know lots of folks on the commercial networks who spend hour after hour chatting with Significant Others on the real-time Citizens' Band radio simulators that most networks offer. Each of them pays the network's hourly connect fee to do so. Even if that's only \$4 or \$5 an hour each, they must spend a small fortune talking with each other over a period of time. Provided one of them lives in a PC Pursuit major market, they could do the exact same thing for \$25 a month since only the caller needs to join PC Pursuit.

## COMMERCIAL NETWORKS

Speaking of commercial networks, if you sign onto one through Telenet now, it might be to your advantage to find out (1) if their computer(s) are situated in a city served by PC Pursuit, and (2) what their connect fees are to members who call in from that area code. If you simply dial through Telenet normally, it costs an extra \$2 an hour to use The Well, for instance, a network in the San Francisco area (415/664-2811 by modem). But by joining PC Pursuit, you can call into San Francisco through Telenet using the special PC Pursuit procedure and THEN sign onto The Well for \$3 rather than \$5 an hour. The upshot is that if you log onto The Well or any other similarly accessed network for more than 12 hours a month, PC Pursuit will pay for itself and you can call bulletin boards and friends all over the country free! Just remember that any computer you call (the one that will answer) must be located in one of the major markets served by PC Pursuit as established by its telephone area code.

For more information about PC Pursuit call (voice) 800/368-4215 from 8AM to 5PM eastern time, or use your modem to sign onto their free 24-hour information and sign-up BBS at 800/835-3001 (300 or 1200 Baud, seven data bits, no parity, 1 stop bit -- 7N1 in jargon). Download the text files of detailed information you'll find online there, including instructions

on how to join and use the service. And in case you do decide to join (there's a \$25 sign-up fee and you must have a credit card) here are some Amiga and C64/128 bulletin boards in the 14 markets served by PC Pursuit now. Realize that while I have listed boards that were functional at the time this article was written, that's no guarantee that they will be online by the time you read it. They do tend to come and go. Lists of boards across the country are available on many commercial networks and most boards offer compilations of others in their area. Another way of finding them is to leave a message or see if the SYSOP on the system you're connected with is available for live chat and ask for his or her recommendations. There are hundreds (maybe even thousands) of bulletins boards in these 14 cities alone and most of them are freely accessible to anyone with an appropriately equipped computer. And now with PC PURSUIT, reaching them, whether they're devoted to computers, matchmaking or some topic in between, is no longer prohibitively expensive.

(Editor's note: An excellent and frequently-updated list of public BBS systems also appears in every issue of **Computer Shopper**.)

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### BBS Tips and Etiquette *from Miss Peggy*

If you have call waiting service, contact your local telephone company for a way to temporarily disable it while you're online. The tone generated by incoming calls will instantly disconnect you from another computer.

Bulletin boards can handle only one caller at a time since the host computer (usually a C64/128, Amiga, Apple, IBM-PC or TRS-80) is connected to someone's private telephone line, which is also why some of them operate only at night. As far as telecommunicating with text is concerned (as opposed to programs) all brands of computers are compatible. In other words, your computer can talk to any other computer online.

Expect limited access to most boards on your first call and go in at 300 Baud if you aren't sure what the system will accommodate. Most SYSOPs verify that you're sufficiently sincere

to call more than once and many offer various 'levels' of access to their files and message bases.

Use your own name (not a handle) and address when you register, and put them in the same form every time. If you use "Joseph Jones" one time and "Joe Jones" the next, the host computer will think you're two different people. Some systems assign Logon IDs and all require you to supply a secret password. Write this info down and keep it in a safe place. You'll need it the next time you sign-on.

Take the time to post a message, even if it's just hello to the SYSOP. (Being friendly and knowledgeable might snag you a better access level, too.) And once you're familiar with a board, upload programs to it -- give as well as take. It's hard to overemphasize the time and energy that SYSOPs routinely invest in their boards, not to mention the money, and most of them do so as a public service, expecting few returns (beyond perhaps a little recognition) on their investment.

Never, ever become a party to pirating (illegal distribution) of copyrighted material, nor stoop to using obscenity in a public message. Lastly, don't go on a CP/M board (usually designated as RCPM) unless you know what you're doing.



"The last anyone knows for sure, we had computers designing computers to build computers to build other computers. Somewhere along the line it got away from us!"

#### SERVICES WITH AMIGA INFO ONLINE:

Telephone	Location	Name	Hours	Baud	Remarks
201/446-1424	Englishtown NJ	Ami Palace	24 HR	3/12	Amiga, Atari, Mac
206/324-0830	Seattle WA	XAKEPOBO MECTO	5PM-8AM	3/12	24 hr weekends
212/269-4879	New York NY	AMUSE	5AM-3AM	3-24	FidonetNode 107/34
213/478-9788	Malibu CA	AmigaBoard!	24 HR	3-24	Fee for downloads
214/231-1372	Dallas TX	Rising Star		3-24	FidonetNode 124/15
215/363-6625	West Chester PA	Del-Ches System	24 HR	3-24	TBBS System
301/666-9109*	Baltimore MD	Amiga Board	24 HR	3/12	
303/693-4735	Denver CO	Amiga TBBS	24 HR	3-24	Rick Parker, SYSOP
312/858-8087	Glen Elyn IL	Lattice, ID: guest		3-24	Fidonet Node
313/348-4479	Novi MI	Novi Download	24 HR	3/12	Voice 1st 348-4477
404/843-1938	Atlanta GA	Amiga Net	24 HR	3/12	
415/595-5452	San Carlos CA	F A U G	24 HR	3/12	1st Amiga UG Board
617/835-2626	Lowell MA	Worcester Amy	7PM-5AM	3	Amiga oriented
703/978-0148*	Fairfax VA	The Empire	24 HR	3/12	Sister...
703/352-1936*	Fairfax VA	The Empire II	24 HR	3/12	Boards
713/391-1402	Houston TX	Cloud 9	24 HR	3/12	83 megs, 600+files

\* On Telenet, use 202 for all Washington DC area codes (301, 703).

Telephone	Location	Name	Hours	Baud	Remarks
201/297-7399	N.Brunswick NJ	Pan World Intl	24 HR	3/12	
202/428-1960*	Germantown MD	Comm.Alliance	24 HR	3/12	New phone number
206/743-6021	Seattle WA	Commodore U-G	24 HR	3	
212/885-0969	Patchogue NY	Women's BB	24 HR	3/12	Tele-Master
213/698-3306	Whittier CA	The Dark Side	24 HR	3	
214/270-6755	Mesquite TX	Super CPU	24 HR	3/12	Sports conferences
215/965-8331	Allentown PA	Hermes-128	24 HR	3/12	
303/452-0544	Denver CO	CCCC BBS	24 HR	3	CBM User Group BBS
312/745-8699	Chicago IL	Comm-64 Forum	(?)	3	CCBB
313/428-9309	Manchester MI	Commodore BBS	10PM-6A	3	CCBB
404/365-6130	Atlanta GA	Atl.Comp.Soc'ty	24 HR	3	CCBB
415/265-6677	Berkeley CA	TerrapinTransit	24 HR	3/12	Color grphcs/game
617/875-3618	Framingham MA	Xevious	24 HR	3	User chat 449-7322
703/989-7461*	Roanoke VA	Daily Exchange	(?)	3/12	May have fee
713/873-0403	Houston TX	Info-Net	24 HR	12	Police-Net

\* On Telenet, use 202 for all Washington DC area codes (301, 703).

#### SERVICES WITH C64/128 INFO ONLINE

overcome by using accidentals and adjusting durations but doing Barry Manilow tunes, for instance, is a real hassle. And using Append to play one song after another can result in some strange stuff since all songs play in the key of the first one. Other complicating factors are that durations are columnar in effect which takes some getting used to, and the documentation doesn't explain how to move instruments between sound palettes.

Music Studio's five screens are beautifully done with color being used to differentiate voices. It's very attractive on a good color monitor, decent on a Commodore 1701 or 1702, but you can forget it on a monochrome box -- it shows 16 shades of green! It uses standard music notation and while note stems overlaying others on the screen doesn't effect its functionality, music printouts don't look as good as they could. Music repeats and printed lyrics are nice features but the printouts break scores any old place (not just at bar lines) which isn't so nice.

An alternate screen lets you compose on the grand staff but rather than using notes and rests, color-coded blocks are used in a literal representation of tone colors. This can be swapped instantly with the main composition screen where the music is shown in standard notation. For educational purposes, it's real handy.

Music Studio offers MIDI-out and has several Casio CZ-101 patch programs in the documentation for altering the sounds on that synthesizer. It was designed and programmed by Audio Light, the company that did many good programs for the Koala Pad. In view of that and versions of Music Studio for other computers, I think they could have done a better job for the Amiga. It's available for \$59.95 from Activision, 2350 Bayshore Frontage Road, Mountain View, CA 94043, 213/306-0735.

## ADD A LITTLE MIDI MUSIC

As you've probably gathered, the Amiga can control and coordinate another kind of sound, those generated by MIDI-connected music synthesizers. During the past couple of years, MIDI has revolutionized professional music. It lets electronic devices (synthesizers, drum machines, mixers, etc.) communicate with each other, putting them all under the optional control of a computer. Among other things, a computer can store preprogrammed instructions

for all of these devices, and strike up the band on command.

If you're thinking about getting a synthesizer to fool around with at home, get one that's multi-timbral, like the Casio CZ-101. Multi-timbral means that under program control, a synth can play more than one kind of instrument sound. The CZ-101 has four octaves of keys about 2/3 the size of those on a piano, eight voices total of which four are MIDI, and can be purchased used or by mail for substantially less than its \$495-or-so suggested retail price. Whether you get Deluxe Music or ProMIDI Studio to use with it depends on how serious you are about music; a number of professionals have ProMIDI Studio, Fleetwood Mac and Frank Zappa, to name a couple, and Chuck Fisher, who recently replaced several computers in his professional recording studio with a single Amiga and ProMIDI Studio.

All of these programs offer MIDI-out but only Deluxe Music and ProMIDI Studio have MIDI-in as well. With MIDI-in, music can be entered by playing on the keyboard of a MIDI-connected synthesizer. Remember: You can play very slowly, with one finger if that's all you can manage, since increasing the playback speed of digitized music doesn't alter its pitch. Deluxe Music and ProMIDI Studio will also mingle and mix synthesizer voices with Amiga sounds, and since the Amiga can play samples, it makes a dynamite drum machine (something no synthesizer can claim). You'll be amazed at the relative ease of making good music with the Amiga playing drums on its four channels while a synth plays different instruments along with it. And with the CZ-101's four additional non-MIDI voices, you can perform live, using MIDI sounds as prerecorded backup, which is precisely what MIDI was designed for.

Whether or not you go MIDI, rest assured of one thing: the Amiga's speed of operation and multitasking, coupled with its ability to play sampled and internally generated sounds in stereo, (to say nothing of the strength of IFF compatibility) makes it the musician's computer. Now that software is available to capitalize on all that power, no other personal computer on the market can touch it -- and if someone says otherwise, they're just whistling Dixie.



# Down To Business

a definitive look at business  
and applications software

by Ted Salamone

## PLANNER'S CHOICE

Activision, Commodore 64/128, Disk

What's larger than an accountant's ledger, more powerful than a solar calculator, faster than a #2 pencil, and less expensive than Lotus 1-2-3? Planner's Choice, the 64/128 spreadsheet from Activision, that's what!

Planner's Choice is a revised version of Creative Software's defunct Creative Calc spreadsheet. (The company's assets were purchased by Activision). This venerable C-64 spreadsheet now sports additional mathematical operators. It also boasts a 128 operating mode and the ability to interface with its sister word processor, now known as Writer's Choice.

## SPREADSHEETS PAST

How does Planner's Choice compare to its predecessor? It has a more comprehensive manual with a separate multipage pullout which encapsulates most 64/128 operating information. Though the same (64 mode) data is provided in the old Creative guide, the Planner's Choice version is identical or better in most instances. A tutorial, complete with basic sample data, steps you through every program function.

While Planner's Choice 64 includes additional functions (average, count, future/present value, payment, max and min), it does not offer any additional features (copy, relative, recalc, etc.). The screen layout is also the same. Even commands listed in the Creative manual, but not in Activision's work flawlessly!

For example, <CTRL 1> alters the border color, <CTRL 3> changes the worksheet color and <CTRL 5> alters the message row's hue. Why not list these color changing capabilities? This lapse in the Activision documentation is hard to fathom when you consider that the same capabilities are listed for the 128 mode.

There are also a few *entirely* undocumented commands available. <CTRL S> moves the cursor to the upper left corner of the current screen, <CTRL ;> moves the cursor one cell to the right and <CTRL Q> moves the cursor down one cell. More gems may await the intrepid explorer.

## THE SPECS

Planner's Choice 64 accomodates worksheets of up to 64 columns by 255 rows for a maximum of 16,320 cells. The number of worksheets is limited only by disk space and the size of each sheet.

Basic functions range from absolute value and trigonometric operators to logarithms (base 10) and exponentiation. The entire list is only 14 functions strong, which makes Planner's Choice an entry level spreadsheet.

It allows synchronized and unsynchronized windows, disk operations (directory, format, etc.) and auto/manual recalculations, as well as global or single cell formatting of text or value inputs.

Other capabilities include cell, row and column erasure and copying; relative and absolute formula replication, and row/column insertion.

Cursor movement is very flexible. The standard arrow keys, several function keys, the CLR/HOME key and a GOTO (specific cell) function provide excellent cursor positioning capabilities.

Besides ease of learning and use, the main strength of Planner's Choice's lies in its ability to interface with a companion word processor. This capacity, standalone or integrated, adds extra depth to what is otherwise an unsophisticated program.

## 128 WHERE ARE YOU?

The Planner's Choice disk also contains a 128 version. It is entirely new; the original Creative series was conceived and brought to market before the advent of the 128.

While this review concentrates on PC's 64 capabilities, the 128 mode is well worth noting.

The C128 side of the manual is a separate entity with it's own unique identity. Different sections are devoted to loading, learning and using the 128 mode. Only in the reference section do both modes mingle. Functions which are available only in one version, or which are handled differently from one to the other, are clearly labelled.

The 128 provides either a 40-column display on a composite monitor or 80 on an RGB or monochrome monitor. Screen shots in the user's guide reflect this advanced capability, adding to the manual's effectiveness.

The command structures are slightly different from the C64 version. This means users upgrading from the 64 program will have to relearn a few things. Not too devastating, but annoying and somewhat inconvenient.

While C-128 keys such as HELP, ALT, CAPS LOCK and NO SCROLL work, the standard 64 arrow (cursor) keys do not. They are replaced by the 128 arrow keys. And, of course, the numeric keypad is an important asset.

Pressing HELP pulls up a few screens which detail command key uses and various functions. Several icons spice up the on-line aid, adding some visual impact in the process.

The NO SCROLL keys toggles on and off. In one position the cursor bar remains stationary and the lines (rows) scroll by. In the other position the bar moves and the lines (rows) remain stationary.

The ALT key moves the cursor from one window to another when the window mode has been activated. If pressed simultaneously with function or other menu option keys it suppresses their normal functions.

Undoubtedly the biggest advantage to the 128 mode is the extra RAM available for worksheet construction. About 60K is free, allowing you to build sheets of up to 255 rows by 255 columns for a total of 65,025 cells. (Compare this to a little over 28K free in the 64 mode).

All command key functions are listed at the bottom of the screen, rendering the manual and on-line help unnecessary in most cases. Novices and casual users will probably be the only ones who need to access the documentation after the initial learning curve is passed.

While there are no 128-unique operators, there are several differences in commands and function keys. Users can blank the entries and formats of individual cells or cell ranges, a function which replaces the 64 mode erase command. More importantly, you can easily delete rows or columns. (The 64 version only allows row/column insertion).

## SUPPORT

Registered owners are entitled to support via a toll-free telephone hotline and a single backup disk. To get the spare disk you just send in another \$10.00 and hibernate for the winter - it takes 6 to 8 weeks for Activision to respond to requests. Don't wait until the disk blows to request a backup.

## THE BOTTOM LINE

Even though the C64 version has seen little refinement since its days as Creative Calc it is

still a viable solution for light users, and the 128 version now makes it easy for 64 owners to upgrade while retaining data. For those on the upgrade path, Planner's Choice could be a good choice.

## VIZASTAR 128

Solid State Software, Commodore 128 Disk/Cartridge, \$119.97

There is a productivity program for the Commodore 128 with a "one-two punch" that separates it from all the rest. It's Vizastar 128, the Information Processor from Solid State. This multifunction program combines a flexible, capable database and an extremely powerful, quick spreadsheet with stunning graphics.

The spreadsheet is Vizastar's primary function, the foundation for everything else. Though the database and graphic functions add a good deal of utility, it's spreadsheet capabilities are reason enough to buy Vizastar.

## THE NICKEL TOUR

Vizastar 128 is a combination cartridge/disk-based application. The cart takes care of copy protection, making it easy for users to backup the unprotected program disk. (Solid State recommends duplicating the master disk).

This menu-driven, autoboot program gives you 80-column output, and supports color printers in addition to the usual black & white units. The manuals and disk-based tutorials use real life examples to drive important points home.

Vizastar is menu-driven, and either the Commodore logo key or the ESC key is used to activate the menu mode. Once there your selection is made by pressing the SPACEBAR (to move the highlight), followed by RETURN; or you can merely enter the first letter of the desired operation. Nothing could be simpler.

Instead of relying solely on many layers of menu options, function keys may be used to replace the most-used functions like spreadsheet recalculation, scrolling forward and backward by screens, and moving to a specific cell. F1 and F2 perform two versions of the same function, placing a cell within a formula. F2 is the absolute (as opposed to relative) pointer. F1 also allows quick entry edits (math, logical, or text) when the cursor is positioned over a filled cell.

Two function keys are reserved for a special set of Vizastar operations, the automatic execution (macro) routines. With this internal

"programming" capability users can create a string of keystrokes for re-use. While on the subject, standard operations (copy, move, etc.) are cut short via the RUN/STOP key.

## IN THE BEGINNING

After booting Vizastar 128 for the first time it is best to load the "Read Me" file, an electronic update of operating instructions and general information which came into being too late for inclusion in the manual. It also details changes between Vizastar's 64 and 128 versions, useful for those interested in upgrading.

General enhancements over the C64 version include the ability to quickly reach a worksheet's boundaries (TAB/cursor key combinations) and to perform ascending or descending alphanumeric sorts up to 10 levels deep. Such a generous upper limit makes its easy to set up extremely fine data filters.

The C128 version sorts faster than the C64 version; however it does not adjust formulas containing references to sorted rows; sophisticated users take note.

An improvement in the copy and move routines now means that only the top left destination cell be designated. The program remembers the shape of the data being transferred and acts accordingly. In the 64 version you have to specify start and end cells, a real hassle when working with large amounts of data.

## A DOUBLE DOSE OF MANUALS

Vizastar 128 has a Tutorial Guide in addition to the more traditional Reference/Owner's Manual. While some of the information is duplicated, this 51-page booklet provides a useful service for newcomers or casual users who may not be acquainted with spreadsheets and databases. The guide also covers hardcopy output and creation of simple "Exec" files (macros).

The Owner's Manual digs into the nitty gritty details of running and using Vizastar 128. It is well organized and thorough in its contents. Information is presented in building block fashion; the foundation is laid before more advanced concepts are introduced. This approach lessens the intimidation factor which often overwhelms users trying to digest a program of this scope.

Despite its excellent teaching methodology

and complete reference section the manual does suffer from a lack of illustrations or screen shots.

## HELP OF A DIFFERENT COLOR

Vizastar does not have on-line help; instead it has a series of tutorial files on disk. These are accessed (very cleverly) through the macro function. After loading the menu (a macro itself) you select options to review specific topics such as building macros (!), using the database, working the range functions (copy, move, etc.) or general definition of terms.

While part of this on-line aid is self running, displaying useful insights and information, a large number of the topics are interactive in nature. You get to actually key in data and review the effects. This is vividly demonstrated in the graph option. You first select a standard two dimensional bar chart, then alter the data. Right in front of your eyes the chart adjusts to the new parameters. Hotlink capability for the 128!

Cell Sheet File <b>Print</b> Data Graph									
Row, Options, Page, Line, Top									
	A	B	C	D	E	F	G	H	
1		Stationery		6.95					
2		Meals		68.99					
3		Motor Expenses		85.67					
4									
5		TOTAL		153.61					
6									
7									
8									
9									
10									
11									
12									
13									
14									

Another interactive portion of the on-line guide covers the database. It defines all terms in a succinct yet complete manner. The automated date setup tutorial is another gem. There are a few left wanting however, the macro creation section in particular.

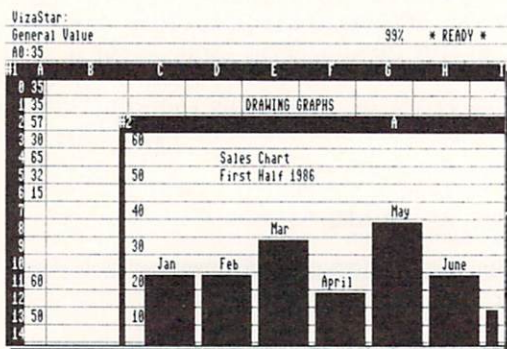
Since the tutorials can be loaded into a worksheet they sort of work like traditional help. Then again, they sort of don't, since you have to save data being worked on before accessing the tutorials, then recall it when you're done learning. The tutorial is a left-handed approach to on-line help.

## AND IN THIS CORNER ...

Vizastar's first impression is one of antiseptic, laboratory-like efficiency. The blue and white ruled display is uncluttered and inviting.

The spreadsheet is 1,000 rows by 64 columns in size, controls a 60K workspace and allows up to 9 simultaneous windows. Though its 30 built-in functions mean business they are pretty standard, without exceptional entries or uniqueness.

The most advanced ones include horizontal and vertical table lookups, ISERR, ISN, IF, FALSE, TODAY, DAY and DATE. ISERR and ISNA are used to return true (1) or false (0) values under designated conditions. It's



range of logicals is adequate for business, educational and home use. Operators include OR, AND, NOT, =, < >, < >, <= and >=.

Revealing its English origins, Vizastar 128 allows users to alter "tone". No, Vizastar is not talking bells, buzzers and beeps; it's talking colors. From within the TONE option you can independently cycle through 16 text or background colors. This is a welcome feature; long sessions in front of a CRT are often less trying when color (colour?) combinations are changed from time to time.

## PIES, BASES AND EXECS

Basic two-dimensional bar charts can be viewed directly on the worksheet. The pie and multibar (3-D) graphs display on a hi-res screen separate and independent from the worksheet. This enhanced video output is a real eye popper, particularly the multibar charts.

Where the pie charts are colorful and informative, the 3-D images are vivid, stand-up-and-take-notice presentations. Since they both

use the same colors and are displayed at the same resolution, you may ask "What's the difference?" It's a matter of depth and shading. The pies are two dimensional (no flavors either) while the multibars have a contrasting shadow which serves to accent and strengthen the image.

Both types show little or no color bleed. While build times (the time it takes for the chart to draw on-screen) are not instantaneous, they aren't excessive either. Both types are worth the wait.

The database is rather full featured. Its generous limits allow up to 9 screens per record, 8,000 characters per record and up to 16 separate files per disk. The number of records and databases is limited only by disk space.

Customer File	
Company	ALPHATECH INC.
Street	2801, Odyssey Road
Town	Beauty Lodge
County	Middle City
Postcode	CM12 7TR
Telephone	
Contact Details	
Name (Mr. B. Oughty)	Title (Sales Director)
Day (16)	Month (2)
Year (86)	Next Contact (30)
Order Details	
(Some interest shown. Contact re. order in 30 days.)	
Notes	

Another version of the program's hotlink capability manifests itself here. Fields can be set to use worksheet cell contents, calculations can use worksheet formulas, and fields can even be included in the worksheet formulas!

User-defined selective reporting is another measure of the database's flexibility and power. It's primary limitation appears to be restriction to a single key field.

Executing a macro is easy. Developing one, while complicated, is not difficult. Macro creation is not a "learn-while-you-do" exercise. Instead of recording sequence keystrokes for replay, Vizastar has you enter keystrokes just like a formula. Function keys and other special entries must be preceded by CONTROL so the program recognizes them as macros. Once familiar with the special entry conventions building macros is just a matter of devoting the time and attention needed to get the job done.

Inclusion of such a sophisticated feature moves Vizastar 128 far beyond most 128 applications.

## THE COMMAND POST

Menu commands control cell characteristics (format, recalc, protect, width and color), sheet factors (copy, move, insert, delete, windows, global formatting, sort order, erase and freeze headings), and file commands (load, save, merge, format disks, scratch files, and send DOS commands). The ability to send DOS commands lets you set device numbers, validate disks or issue any other DOS commands.

Through the Print option you designate output ranges, send specific printer codes for boldface, underlining, etc. or completely manipulate page format. Type of printer (RS232, Commodore or parallel), type of paper (fanfold or single sheet), paper length, text length and margin settings are altered from a single table. (A separate but related feature is the ability to dump a screen via ALT-1, 2, or 3 command sequences).

Database commands are used to name databases and files, specify ranges and establish search/sort criteria. You can also lay out file designs, draw boxes, highlight fields or alter anything anytime. And you can import or export CBM ASCII sequential files with this option.

Every option mentioned so far is totally RAM resident. One, Graphs, accesses the program disk for certain hardcopy information. Otherwise it, too, is I/O free.

## A FEW FOIBLES

Of course there are some omissions. For instance, the program never indicates calculation status on the worksheet. Is it manual or auto?; some people like to know.

If there is a way to blank or clear an entire worksheet with a single command it is well hidden. Having to designate the entire worksheet as a range is ridiculous.

Hardcopy output of graphs needs a graphics-capable dot matrix. No problem there. Screen dumps also need one, though that fact is not clearly presented. Doing screen dumps to a 1526 or equivalent isn't recommended.

The spreadsheet features all the basics you'd expect. The only unusual aspect is the need to enter internal functions in lowercase only. Even though the manual shows @SUM and similar operators in uppercase, the program only recognizes them in lowercase. Though clearly noted in the manual, this situation is still a source of potential confusion.

## WHERE DOES IT STAND?

Anywhere it wants to. Despite minor quirks this is a powerhouse program with few of the compromises normally associated with integrated programs. If Solid State could somehow integrate Vizastar 128 and Vizawrite Classic into a single program it would become the Commodore 128 Appleworks.

## MAXIPLAN 1.0

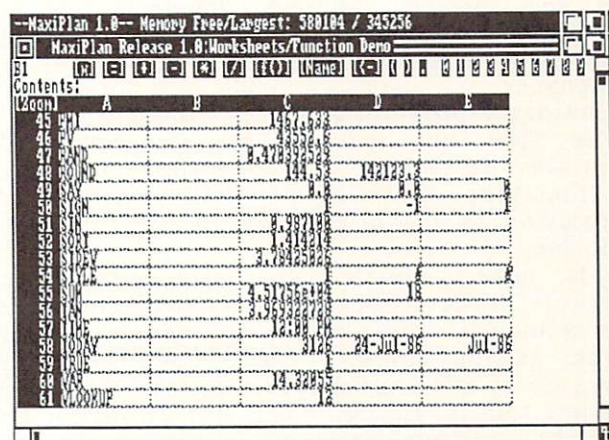
Intuitive Technologigies/Amiga/\*\*/\$150

MaxiPlan is Intuitive Technology's entry into the burgeoning Amiga spreadsheet war. While it's primary application is number crunching, MaxiPlan goes further with a built-in database and sophisticated graphing capabilities.

## IT'S AMIGA-TIZED!

MaxiPlan has done a lot to incorporate the special capabilities of the Amiga into it's operation.

Thanks to its OPEN/CLOSE WORKBENCH options in the Project menu, MaxiPlan makes multitasking as easy as clicking the mouse. (This convenience should not be confused with the program's ability to open multiple spreadsheets simultaneously.)



MaxiPlan accesses the machine's internal speech capabilities via MaxiSet, a peripheral program which allows you to select male/female inflection, pitch, rate, and frequency. MaxiSet must be adjusted prior to opening the worksheet. Actual speech output is toggled on/off and otherwise adjusted via

menu selections from within the main routine.

MaxiPlan allows you to manipulate fonts, typeface characteristics (boldface, underline, etc.) and up to eight user definable colors. Though it's enhanced color mode (8 hues instead of 4) takes a hefty chunk of RAM, the benefits far outweigh the drawbacks.

Besides supporting the mouse, MaxiPlan makes good use of the function keys. The Amiga keys are also used since many menu options have keyboard equivalents. Such flexibility allows users to work the way they want to, not just as the programmer thinks best.

MaxiPlan provides online help without the HELP key; instead, ? brings up help. This is a strange omission considering how well MaxiPlan capitalizes on the Amiga's other special keys. (Help is also available via menu options).

## FUNCTIONS & FEATURES

MaxiPlan's worksheet ranges up to 512 columns by 16,384 rows. Internal memory management techniques conserve memory by using RAM only for active (filled) cells.

The multilevel help feature provides detailed information on commands as well as overviews of the main options. This supplements the material found in the manual's tutorial and reference sections. It in turn is supplemented by the specific notepad comments in the ANSWERS drawer and the sample worksheet templates also included on the disk. (See sidebar).

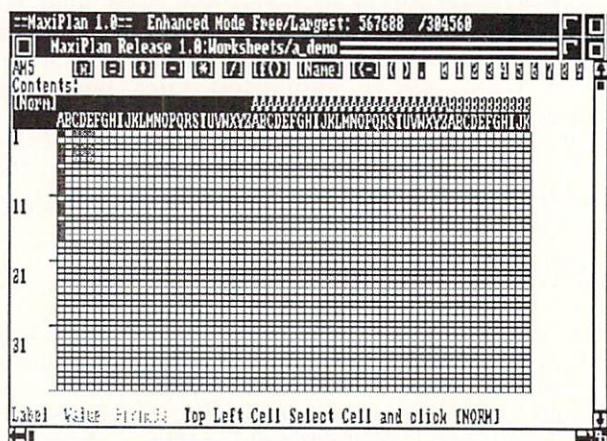
Besides a program for importing Lotus WKS files (but not macros) the program disk contains MaxiMerge for printing labels and mailmerging. However, you still need a word processor to make full use of this optional routine.

The user manual accomodates spreadsheet novices while dispensing enough information (in a logical order) to prevent advanced users from getting bored. It falls down somewhat because of it's too-brief tutorial and the short, almost totally useless index. But the manual is clearly written (except for the database section), with informative screen shots and a good reference section.

The clipboard's cut, copy and paste options work well and with little effort. Information can be repositioned within or between worksheets.

Other basic capabilities include the use of named ranges, protected cells, absolute/relative formula migration, multiple formats (decimal, dollars, percent, etc.) and over 5 dozen built-in functions. Every basic function is present and accounted for. (See sidebar for more information about MaxiPlan's functions.)

Especially in large spreadsheets, ease of cursor movement is of extreme importance. MaxiPlan's programmers evidently realize this, for the program is blessed with an abundance of cursor-movement options: the mouse, dedicated arrow keys, vertical and horizontal scroll bars, function keys (for SELECT and HOME), and Wordstar-like command keys can all be used to move around. Why anyone would want to put Wordstar's multiple-keypress cursor movement commands in an advanced program with mouse control and dedicated cursor keys is difficult to fathom, but at least it's only an option. Cursor movement in MaxiPlan is superior.



## CONSTRUCTION SET

Intuitive Technologies took the "Bill Budge" approach to spreadsheets: a construction set! The upper portion of the screen has icons for formula creation. Click on a mathematical operator and it becomes part of a formula. Likewise with the number icons, parentheses, cancel, and function call icons. It's possible to write an entire formula, including cell references, without ever pressing a key. Fantastic! Naturally things can be done the old fashioned, un-Amiga way if you prefer.

## DATABASE BLUES

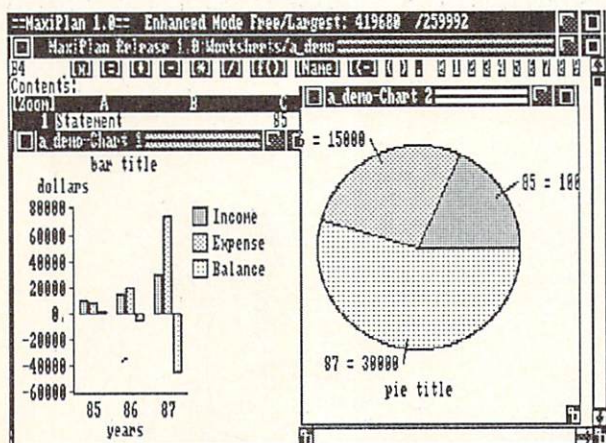
The four-pronged instruction approach the MaxiPlan documentation takes works well in every case but one: the database. Nowhere are the instructions complete. The database requires an inordinate amount of time to learn and far too much trial and error to make it function.

That is not to say the database doesn't work. It does, and very well indeed. By properly combining levels of criteria any quantity of data can be manipulated, extracted or deleted. It just doesn't have to be this confusing or hard to use.

## CHARTING YOUR COURSE

MaxiPlan unveils its true colors when plotting graphs. Its enhanced color mode produces visually spectacular bar, line, pie and area charts. Up to eight chart definitions can be tied to a single worksheet. They can be of one type, or mix-and-match.

A "hot link" feature interactively ties worksheets to graphs. To see this in action draw a graph, change values in the sheet, and watch as the graph adjusts to the new values. Spectacular.



Adequate (barely) room is provided for chart titles and X and Y axis labels. Up to four rows can be plotted in a single chart; a range of columns can be likewise selected via requester boxes.

While the 4 most common chart types are available, stacked bar, exploding pie, scatter and others are needed. Expanded labelling and titling capabilities would be nice, too.

## NOT ALL WINE & ROSES

There are a few problems and omissions. First of all, the macro menu is not operational.

ABOUT MACROS, one of the options, tells you that a macro routine is now available for another \$50.00. MaxiPlan lets you paste notes to any cell, just like the hot selling third party add-on for Lotus. If IT can provide this as a standard feature they could certainly build a worksheet with working macros.

Once while using the PASTE NAME option the entire left side of the spreadsheet's edit section blanked out. The menus still pulled down though none of the options worked. This fluke occurred after flipping between windows. In retracing the steps a Memory Low dialog box was uncovered. Cancelling the option restored the program to full operational capacity. While MaxiPlan did not crash in this case, it failed to properly display the error message about low memory.

Speaking of low memory, these messages started appearing when 50K of RAM was left. This seems a bit early to call out the troops if you ask me.

Even if selected, the TALK option won't work under low memory conditions. The program doesn't warn you about this, it just cancels speech output if the required RAM isn't available.

One complete crash did occur, once when the workbench was opened via the menu option. After issuing commands (AMIGA-N) and (AMIGA-M), pulling the MaxiPlan window down and selecting DISCARD from the workbench menu the program locked up and the Guru meditated.

## THE ENVELOPE PLEASE

MaxiPlan does a near perfect job when it comes to using the qualities which make the Amiga unique. The spreadsheet responds quickly, the graphs have impact and advanced functions are included along with all the basics. The construction set capability is a real boon, simultaneously promoting and making further use of the mouse.

The database feature is an admirable attempt to expand Maxiplan into an integrated package. It will be more successful in this area once the

documentation explains the database better. MaxiPlan's database lies somewhere above a simple filing program but below a true relational database management system in power and functionality.

The Amiga spreadsheet war is definitely heating up; there are 3 major contenders for the throne and MaxiPlan is one of them. If you're in the market check this one out.



## HELP: Any Way You Want It

MaxiPlan offers four kinds of help:

**Manual:** Brief tutorial, first class reference section with short, descriptive explanations of the program's internal functions.

**Online:** Two-tiered approach, provides a lot of default information such as cell width, date formats, etc.

**Templates:** "Physical" evidence on how to use MaxiPlan. Displays fonts, boldface (etc.), colors, the results of each built-in function (Excellent!), and the recalcitrant database. A keyboard template which outlines function key use also comes in very handy.

**Answers drawer:** Main topics of interest covered here include limited use of the scroll bars under Kickstart 1.1, the database, and errata.\*

\*Due to difficulties in Kickstart 1.1 the bars only scroll up to row 2,048. Version 1.2 will supposedly correct this limitation. Minor changes in importing Lotus 1-2-3 (and Amiga VIP Professional) files are explained under the errata heading; steps to set up and use the database are listed under the database heading.

## ADVANCED FUNCTIONS

MaxiPlan's internal functions are grouped into four classes, Numeric, Logical, Auxillary, and database. Here are some of the more powerful and unique functions:

**COLOR** - allows color output of calculation results. Debts can automatically be displayed in red for example.

**DATABASE STANDARD DEVIATION, VARIANCE & AVERAGE** - allow separate manipulation of database criteria.

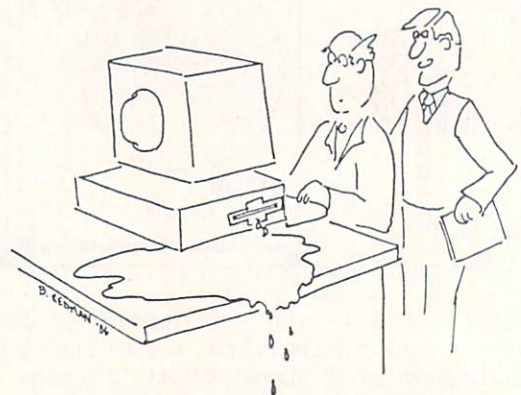
**SAY** - allows verbal output of calculation results. Great for the vision-impaired or times when you're too busy to pay complete attention to all the processing involved in a large worksheet. (Speech can be programmed for when certain conditions are met, alerting you to a special condition in the process).

**NA (NOT AVAILABLE)** - special cell condition.

**ISERR (IS ERROR)** - conditional reading for errors in cells.

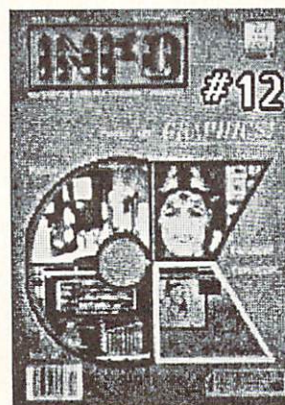
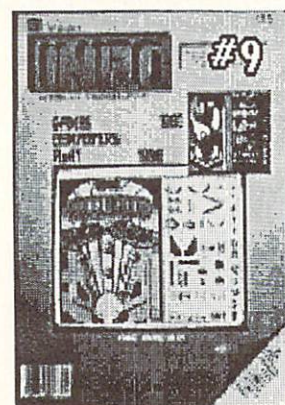
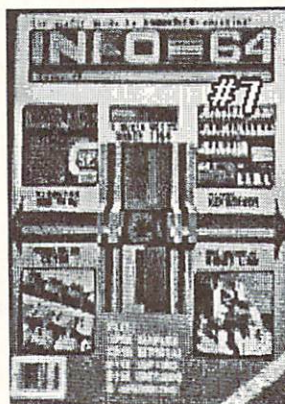
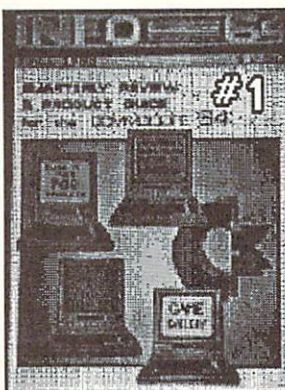
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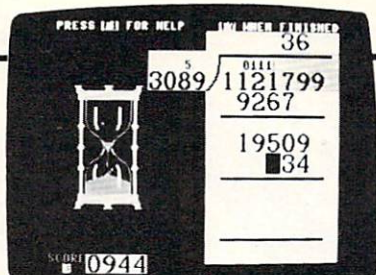
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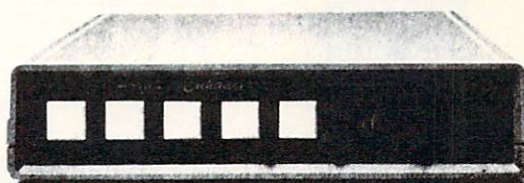
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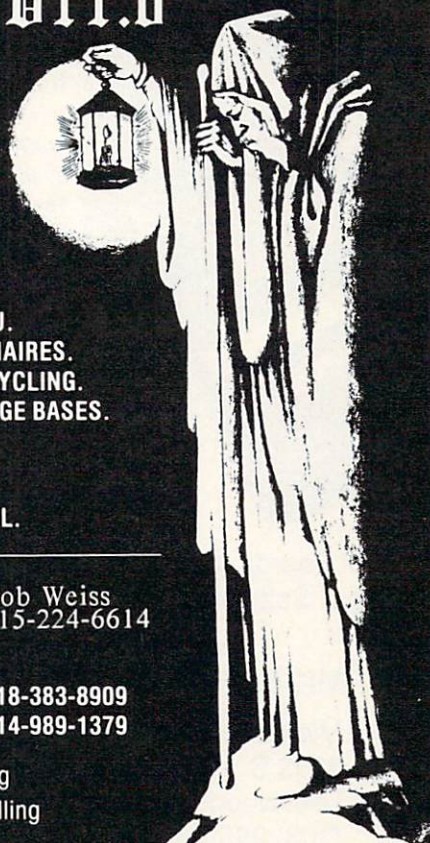
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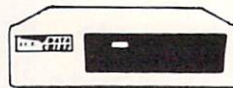
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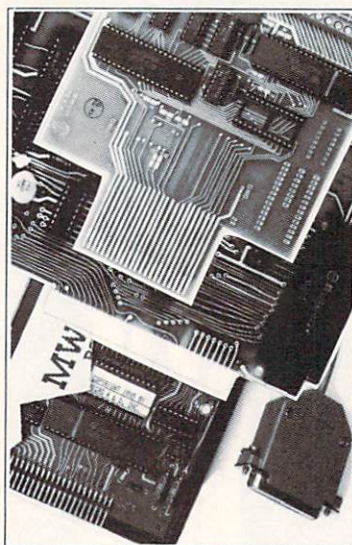
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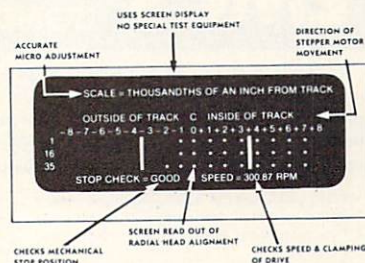


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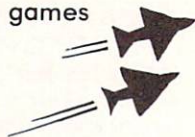
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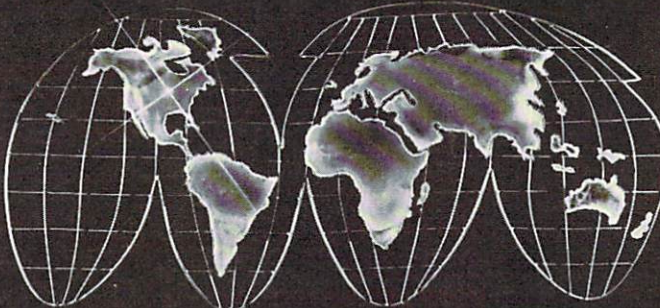
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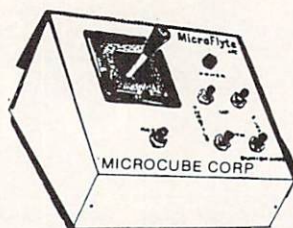
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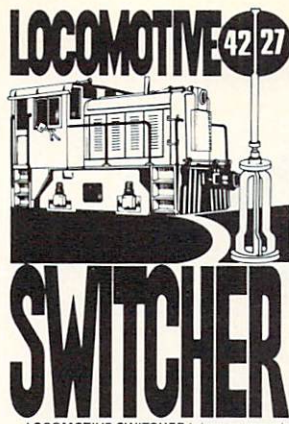
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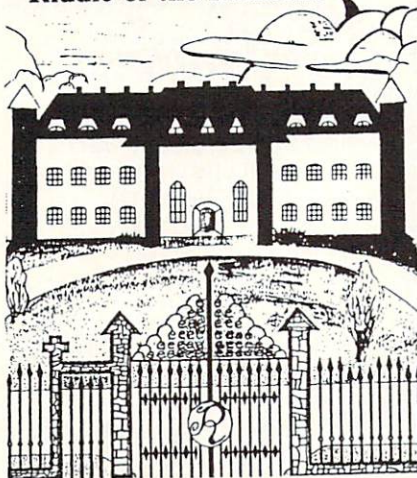
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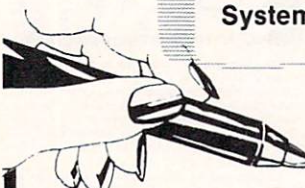
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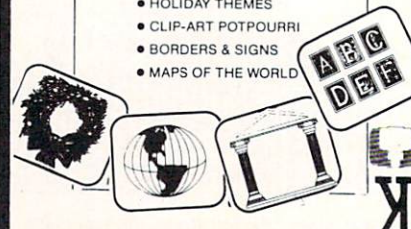
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### SAMPLE SOURCE CODE

```
100      cmp #$0F beq modgot
101      cmp #$01 beq modgot
102      cmp #$02 beq modgot
103      cmp #$06 beq modgot
104      cmp #$0A beq modgot
105      cmp #$08 beq modgot
106      jmp somewhere_else
107
108modgot ; do a module
109      stx module
110      lda modvectors+1,x pha
111      lda modvectors,x pha
112      lda modstatus,x pha
113      rti
114
115some_string$ out ; XR = Length
116      ldy tab
117loop
118      mov str$,x (screen_mem),y
119      mov color (color_mem),y
120      iny dex
122      bne loop
122      rts
123
```

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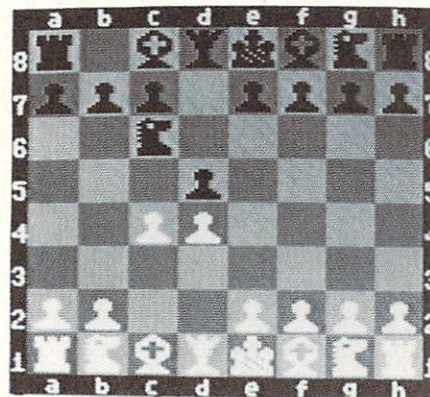
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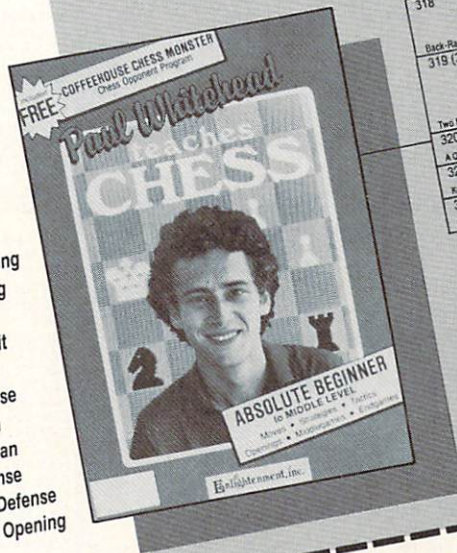


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1=Mf3  
2=cxd5**

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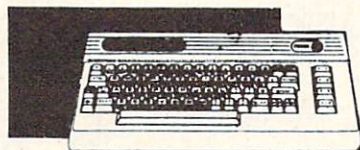
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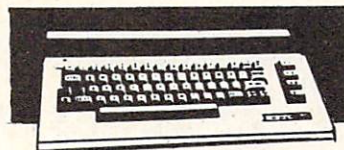
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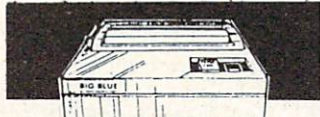
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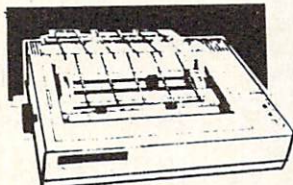
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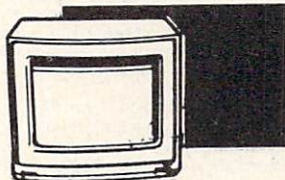
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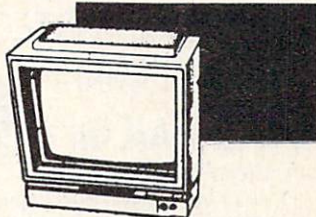
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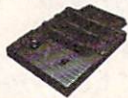
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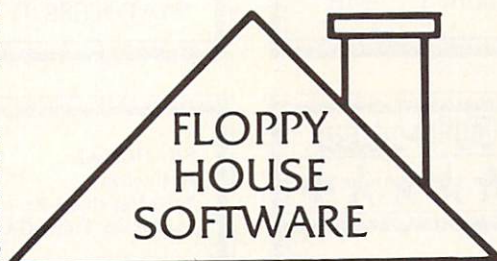
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**CHESSMATE**  
Dark Horse  
Box 36162  
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**INFO-rated**



Chessmate is a respectable chess program which is written in ABASIC (you will need your Extras disk), and has a fair assortment of features and play levels. If it were the only chess program available, it would be easy to recommend. Features include: 1 or 2 players, synthetic speech options, manual board setup, 3-D view (shown), seven difficulty levels, computer-suggested moves, and saving of games. Colors are fixed (boo). Response times range from .5 seconds (easiest level) to 1 hour. The only reason not to buy Chessmate is pictured to its right.-BD

**CHESSMASTER 2000**  
Electronic Arts /  
Software Toolworks  
1820 Gateway Dr.  
San Mateo, CA 94404

**INFO-rated**



This is the definitive chess program for the AMIGA, and (like a good *physical* chess set) is a pleasure to look at and 'handle' as well. Absolutely loaded with options including: user-variable colors, chess clock, game analysis, speech, music, board coordinates, set-ups, takebacks, replay, 2D or 3D display, suggest moves, and lots more. Response times from 5 seconds to 100 hours depending on play depth. My favorite feature is the teaching mode which shows all of the legal squares a piece can move to or capture on by simply touching the piece.  
-BD

**DIABLO**  
Classic Image  
510 Rhode Island Ave.  
Cherry Hill NJ 08002

**INFO-rated**



This game is very simple, really. You slide pieces of track in front of a moving ball, and as it passes over a section of track, the track disappears. You just have to keep the ball rolling until all the track is gone. The graphics are simple but effective, the sound and music are very nice, and the mouse interface is easy to use. It's also so maddeningly addictive that it could earn you a one-way ticket to the funny farm. I spent about 1000 hours 'researching' Diablo for this review. I didn't mean to. It's aptly named. -MB

**MARBLE MADNESS**  
Electronic Arts  
1820 Gateway Dr.  
San Mateo, CA 94404

**INFO-rated**



A totally faithful adaptation of the very popular (Atari!) arcade game. One or two players attempt to negotiate the outrageous mazes and traps which lurk upon the marbles' path (I especially like the Hoovers). The only problem with *MARBLE*, is that without the inhibiting effect of the coin slot, you will eventually master the mazes, and have to find something to do with the rest of your life (tho I have heard there is a hidden screen). Our only hope is that someone, somewhere, may be working (at this very moment) on .... *MARBLE MADNESS II* !!!  
-BD

**QUINETTE**  
Miles Computing  
7741 Alabama Ave. Suite 2  
Canoga Park CA 91304

**INFO-rated**



This computerized boardgame is very similar to Pente. Placing five stones in a row or capturing five pairs of your opponent's stones wins the game. Your computer opponent is very competent, and it took me a couple of dozen games before I could defeat it at the default Intermediate 1 level. Like computer chess, the higher levels take a very long time to make a move (overnight at the highest level!) This game is enhanced by excellent graphics, very nice sound effects, and lots of options. Very addictive. -MB

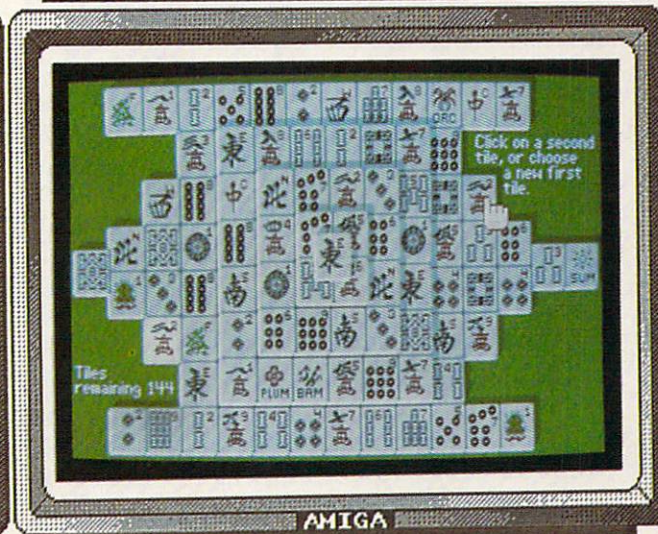
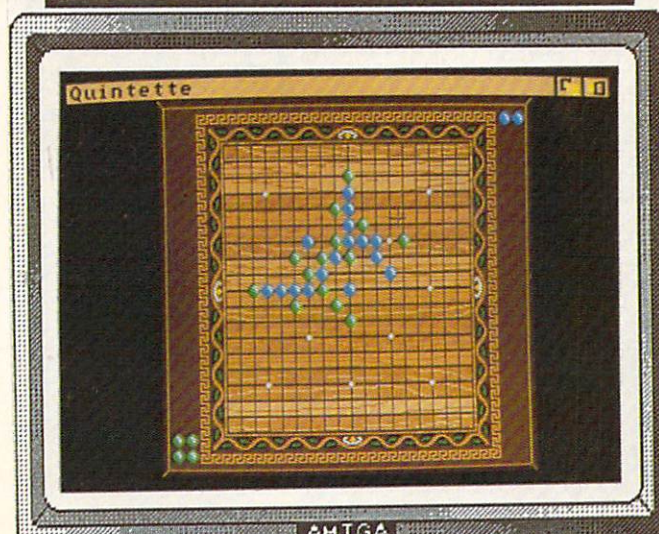
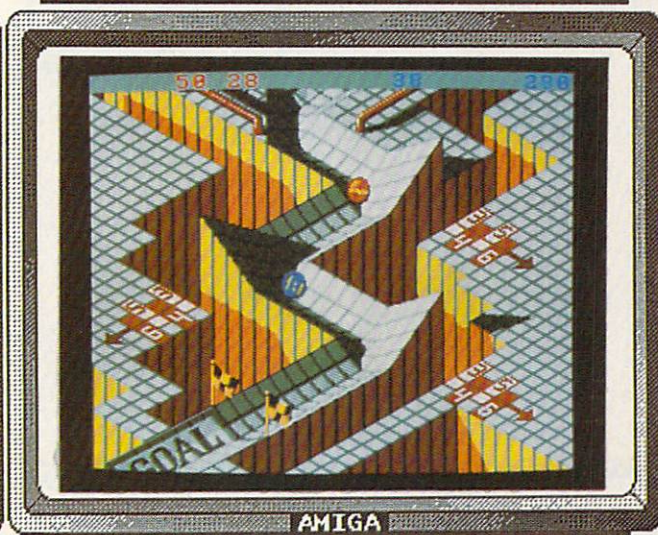
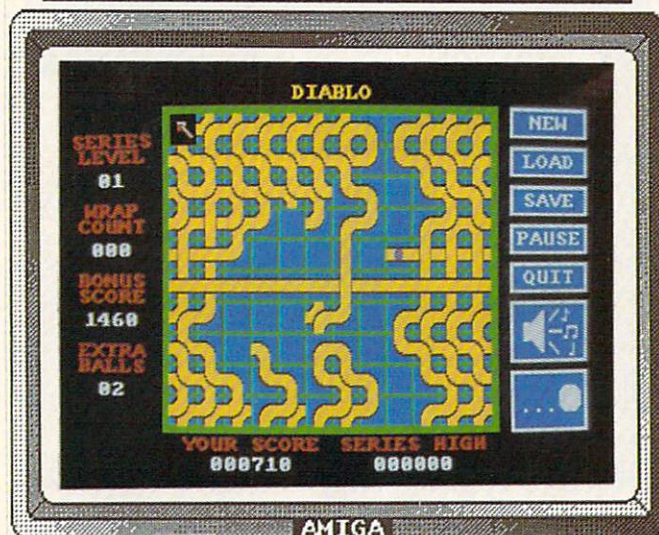
**SHANGHAI**  
Activision  
2350 Bayshore Frontage Rd.  
Mountain View, CA 94043

**INFO-rated**



This game ought to be illegal. It is impossible to play 'just one game'. Based on the ancient oriental game of Mah-Jongg, play is swift and deceptively simple; the deeper into the game you get, the more strategy is needed. A variety of single, multi-player and pre-designed layouts are available. The graphics are 3-D, with the layers of tiles indicated by the shadows they cast. If you can manage to win the game by removing all the tiles from the screen you get a surprise. Plan on spending a LOT of time with this one.  
-TM

# AMIGA GALLERY



**FLIGHT SIMULATOR II**  
SubLogic  
713 Edgebrook Dr.  
Champaign, IL 61820

**INFO-rated**



This computer gaming legend reaches its finest incarnation in the long-awaited AMIGA version. The graphics are superb (as you might expect), with multiple, sizeable zoom windows for simultaneous views from a variety of perspectives. Fly either a Cessna 182, or a Learjet 25g. Fly in real-time thru a detailed world (10,000 by 10,000 miles with a .01 inch resolution!) and buzz familiar landmarks in major cities. Multi-player feature supports flying in shared air space (requires 2nd computer and cables). **BEGIN** your game collection with this one! -BD

**SUPER HUEY**  
Cosmi  
415 N. Figueroa St.  
Wilmington, CA 90744

**INFO-rated**



Playing Super Huey made me wish that SubLogic would hurry up with their own helicopter simulation. Cosmi's flight simulator has plenty of detail and thought behind it, but it just doesn't come together. The thing that really spoils this game for me is the hokey animation: those flat 'cutout' symbols (pictured right) sliding by are as phony-looking as an Atari ad, and are a real waste of the AMIGA's abilities. Everything else is pretty standard except the documentation, which is weak and minimally illustrated. Save your \$\$- better things are coming. -BD

**DEFENDER OF THE CROWN**  
Mindscape/Cinemaware  
3444 Dundee Rd.  
Northbrook IL 60062

**INFO-rated**



This game's graphics have set new standards for computer games. The detail, color, and animation in this two-disk graphic adventure are breathtaking, and the music is impressive. The gameplay, while adequate, is the weak link in this game. It is just not as involved or varied as other games involving the taking and holding of territory. This is only the first in the Cinemaware series of 'interactive movies', and we hope that future releases will uphold the high graphics standards set here while providing deeper gameplay. -MB

**THE PAWN**  
Firebird  
74 N. Central Ave.  
Ramsey NJ 07446

**INFO-rated**



This is an innovative game in many ways. The excellent graphics screens are on pull-down windows so you can scroll them up out of the way if you want to. The parser is capable of understanding the subtleties of English far better than other adventure games, though it is still stumped by the unexpected. The music is some of the best we've heard on the Amiga, but it would be nice to have it play during the game as well as during the title screen. The Pawn's story is good, the characters are interesting, and the play is entertaining. You'll like it. -MB

**STAR FLEET I**  
Electronic Arts/Interstel  
1820 Gateway Dr.  
San Mateo CA 94404

**INFO-rated**



If you've played public domain versions of Star Trek you've played Star Fleet I. You'll find the familiar warping around galactic quadrants blasting alien (Krellan?) spaceships with phasers and torpedoes. The graphics are restricted to gridmaps, text descriptions, and some simple ship representations. It looks like it was ported lock, stock, and lack of imagination directly from the IBM-PC version. You even get the IBM manual with an 11-page booklet containing Amiga changes! If you have a PD Star Trek, you don't need this. -MB

**MINDWALKER**  
Commodore  
1200 Wilson Dr.  
West Chester PA 19380

**INFO-rated**



In Mindwalker you are trying to scrape together the shards of your own sanity. You function as four separate individual personalities, and the landscape you travel is your own mind. (Mindwalker: get it?) Anyway, the graphics are good, the music and sound are excellent, and the gameplay is complex through all three levels; don't try to play this game without reading the manual. My only objection to Mindwalker is that you play with a joystick and a mouse simultaneously. You may not like Mindwalker at first; give it time. -MB

# AMIGA GALLERY



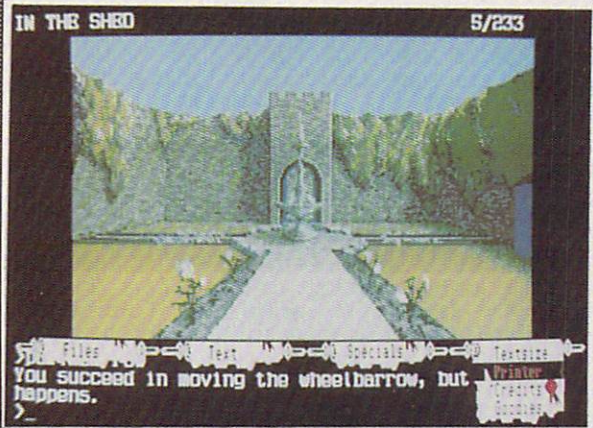
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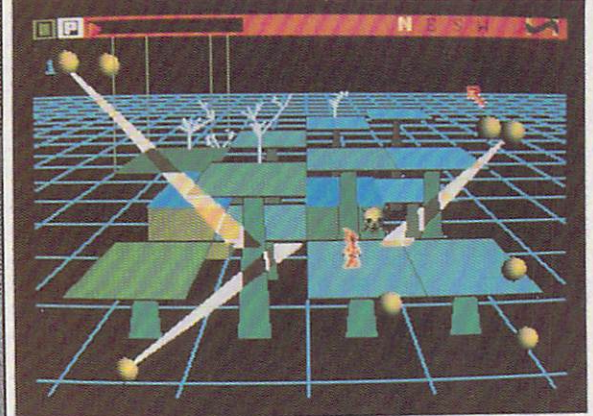
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EXODUS: ULTIMA III  
Origin Systems  
340 Harvey Rd.  
Manchester NH 03103

INFO-rated



The sound is excellent and gameplay is very good in the latest from Lord British. This got 5 stars on the C64, but the graphics and user interface could have been better Amiga-tized in this version. Gameplay uses a combination of keyboard and mouse sans pull-down menus. There are monsters and treasures galore, but Ultima is geared towards dedicated D&D gamer types; if that's not you, you may be overwhelmed. The 3 manuals cover all the game's high points, and you will spend many happy hours discovering the details. -MB

TEMPLE OF APSHAI  
Epyx  
600 Galveston Dr.  
Redwood City CA 94063

INFO-rated



The entire Temple of Apshai trilogy is included on a single Amiga disk. Apshai has been admirably Amiga-tized. The graphics are colorful with a nice 3D shaded effect, the music and sound effects are top-notch, and the highly intuitive user interface makes full use of the mouse and pull-down menus. You hardly ever need to touch the keyboard. There are lots of extra touches like the head-bobbing animation of your player character, and the nice shading and borders on the transaction windows. More likely to appeal to novices than Ultima. -MB

MEAN 18  
Accolade  
20863 Stevens Creek Blvd.  
Cupertino, CA 95014

INFO-rated



If you're a golfer, you'll like Mean 18. It offers real courses, including Pebble Beach and St. Andrews, has realistic (digitized) sound and good play action based on a triple mouse-click system. The game has some nice touches, like a practice green, a driving range, and even an option to design your own course. The greens are a little hard to read. It is slowed down by a lot of extra mouse-clicks, and suffers from blocky IBM-style graphics. Complete Amiga-tization would solve a lot of the problems with the program and make it nearly unbeatable. Fore! -TM

LEADER BOARD  
Access Software  
2561 S. 1560 West  
Woods Cross, UT 84087

INFO-rated



Nicely done graphics are what make this golf simulation worthwhile. Up to four golfers can play four different purely imaginary courses. Play action (using a doublemouse-click) is good, and very difficult to master at the pro level, just like the real thing. The view changes automatically to your next shot and reorients toward the pin. Club selection must be made for every shot. A driving range is included, but no practice green, nor is there a course construction function. Any duffer will find it worth a look. It's tough to choose between this and Mean 18. -TM

BRIDGE 4.0  
Artworx, Inc.  
1844 Penfield Rd.  
Penfield, NY 14526

INFO-rated



Behind this program is a good concept and a mean play algorithm. Bidding is competent and by the book, if somewhat limited in scope. It gives you the option of having opening points for every hand. Bridge 4.0 plays the hand well and aggressively (but I did manage a couple of nice finesses). All play is by mouse and could be speeded up a little. It also employs optional speech and will tell you in no uncertain terms if you renege. Hands can be re-bid, replayed, claimed, or conceded. Scoring is on a real scoresheet, unusual and welcome for computer bridge. -TM

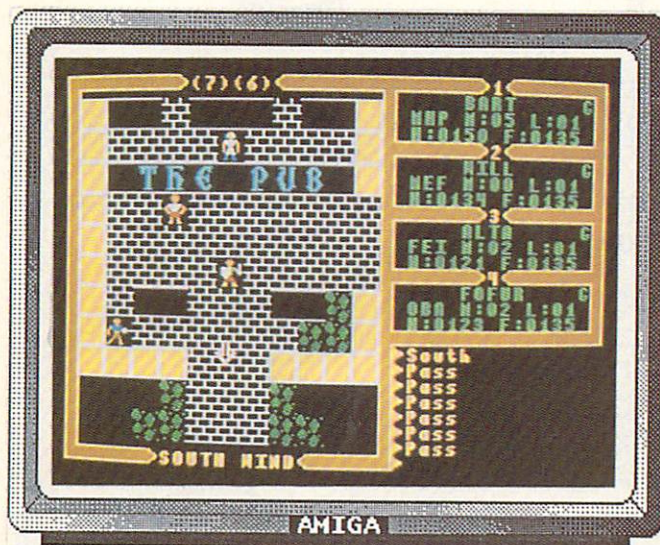
BALANCE OF POWER  
Mindscape  
3444 Dundee Rd.  
Northbrook IL 60062

INFO-rated

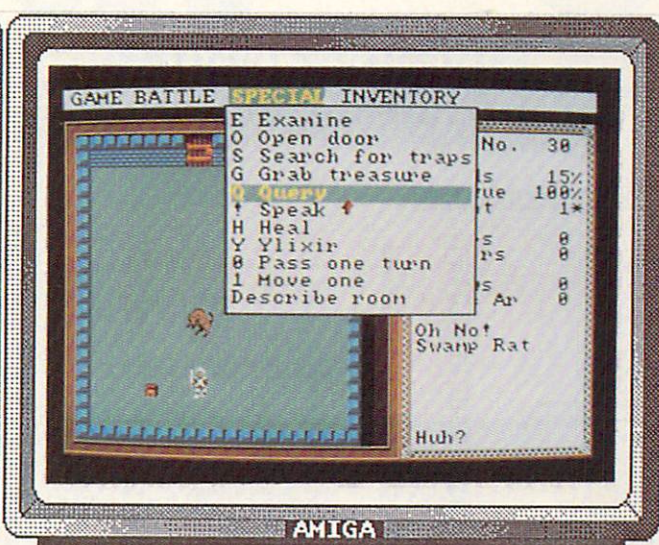


Balance of Power is about the delicate balance of the superpowers. The game is as complex as world politics, but the pull-down menus and popup windows make it easy to play. You assume the role of the US or the USSR and make world policy, then sit back and observe the reactions. The manual is a veritable textbook on world politics. This 'educational' game is a lot of fun and at the same time does its job well. My one complaint is the obvious Macintosh influence; it lacks sound, but at least some nice colors have been added. An excellent game. -MB

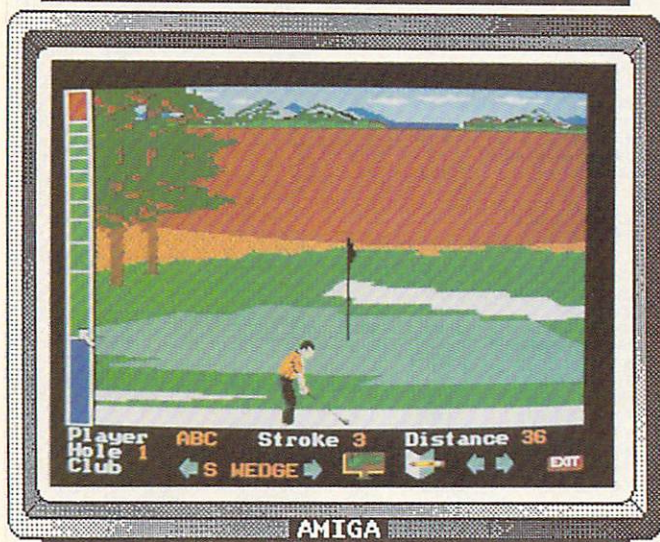
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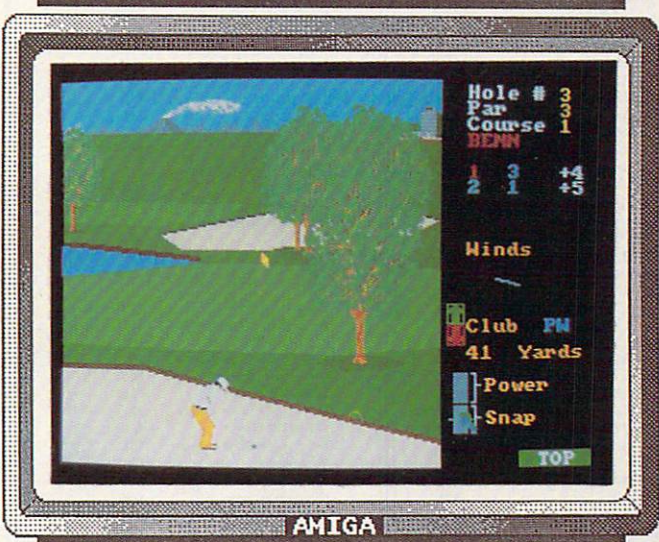
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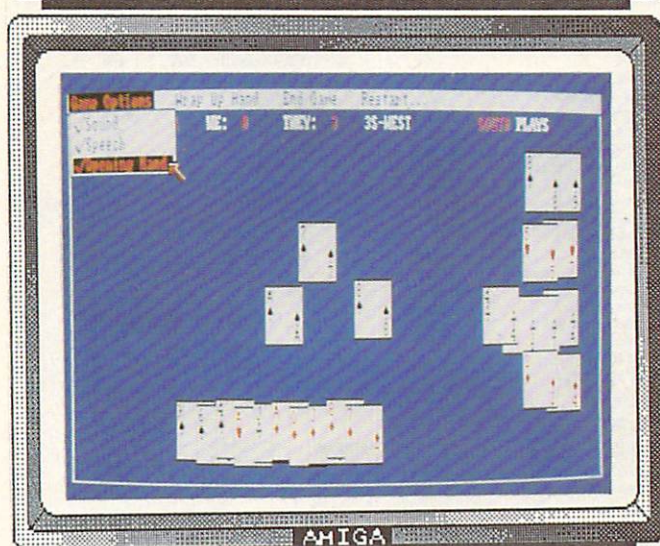
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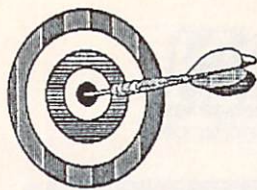
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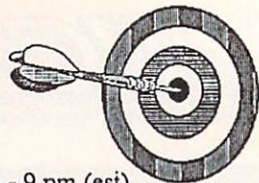
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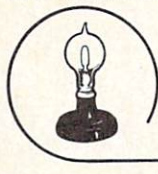
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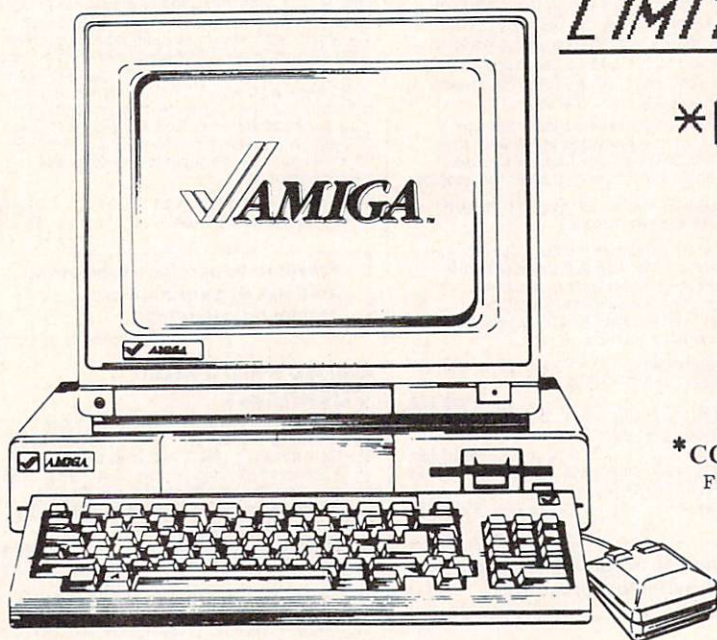
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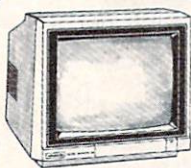


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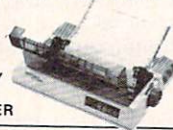
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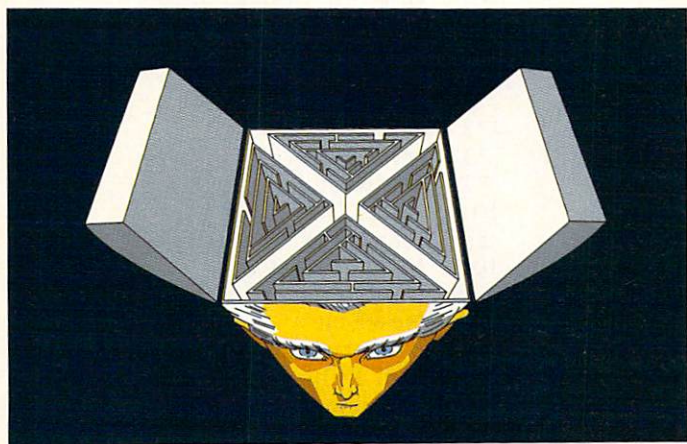
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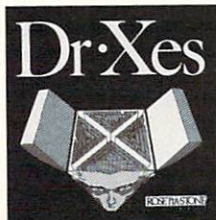


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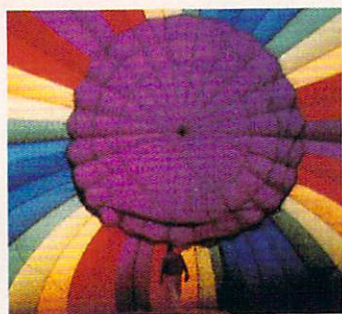
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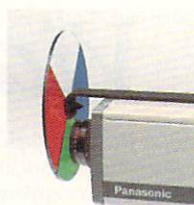
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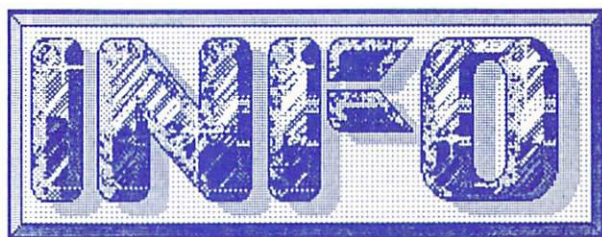
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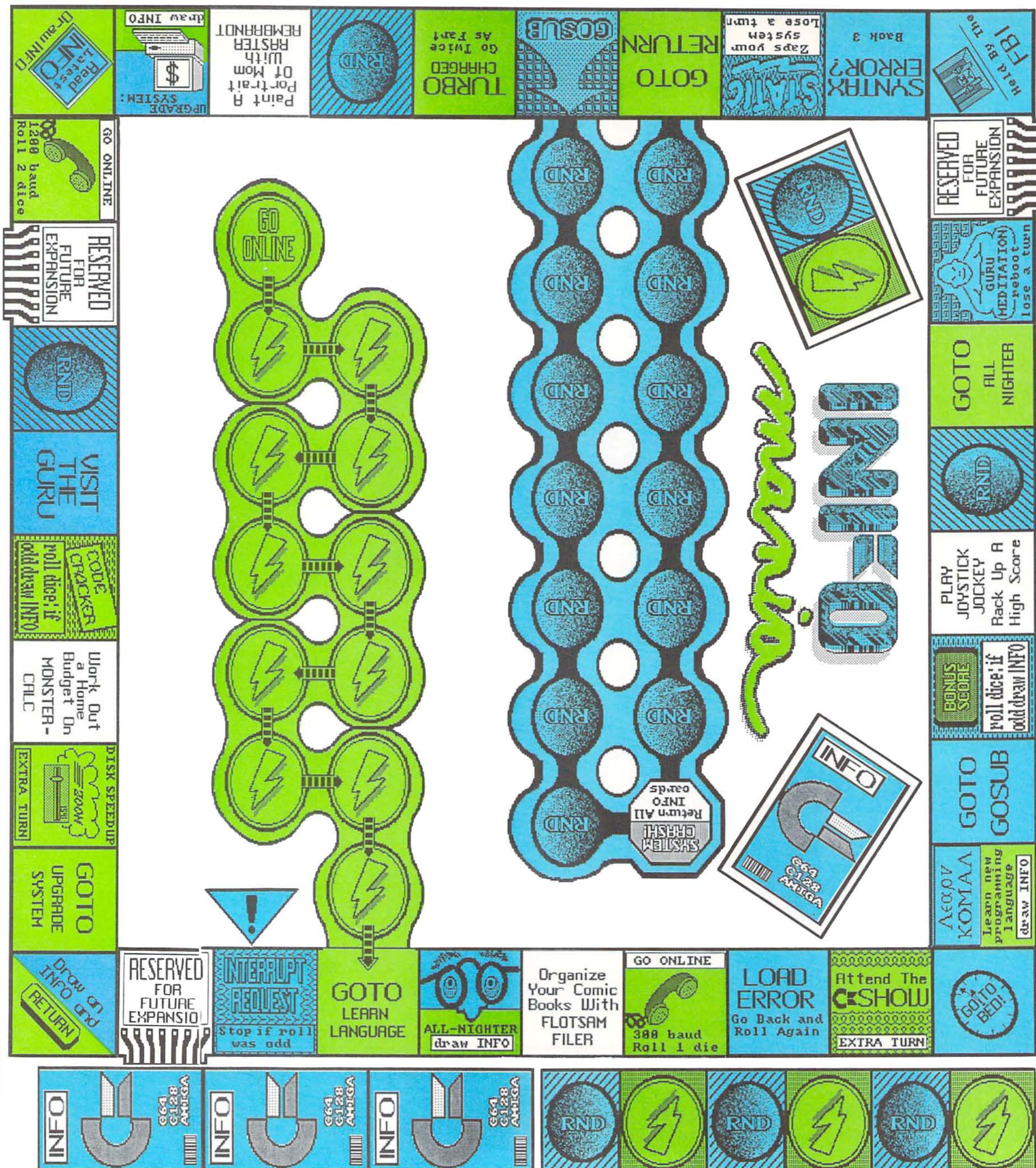
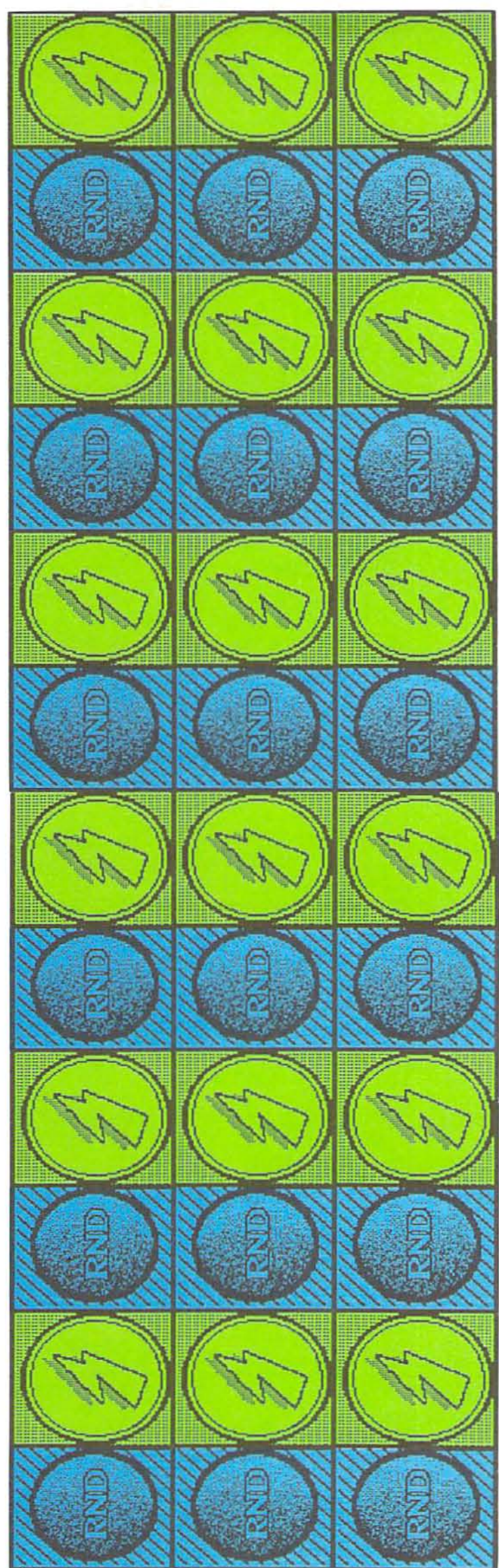


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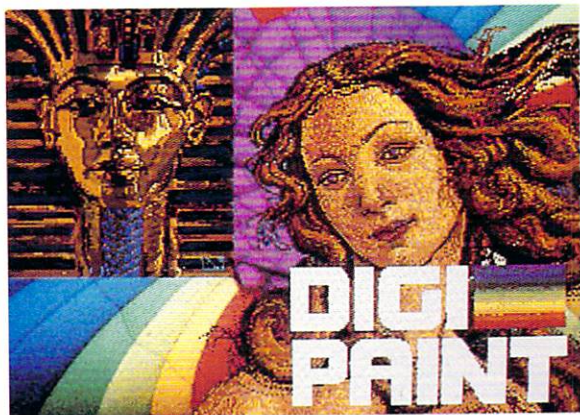
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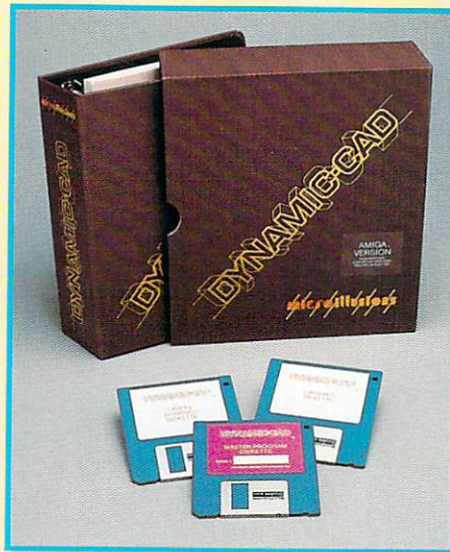
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